

FINAL Addendum 03 – FSP

Smoky Canyon Mine
Remedial Investigation/Feasibility Study
Addition to Section 3.0, Sampling and Analysis Plan

Field Sampling Plan (FSP)

February 2012 (Addendum 03) to
June 2010 (Final) SAP

Additional Surface Water Sampling at Pole Canyon Toe Seep (LP-1) and
Crow Creek at the Wyoming Border (CC-WY-01)

Prepared for:

J.R. Simplot Company
Smoky Canyon Mine
1890 Smoky Canyon Mine Road
Afton, WY 83110

P.O. Box 27, One Capital Center
999 Main Street, Suite 1300
Boise, ID 83707-0027

Prepared by:

FORMATION
ENVIRONMENTAL

2500 55th Street, Suite 200
Boulder, Colorado 80301

USEPA SF



1567875



United States
Department of
Agriculture

Forest
Service

Caribou-Targhee
National Forest

1405 Hollipark Drive
Idaho Falls, ID 83401
208-524-7500

File Code: 2160

Date: March 22, 2012

Alan Prouty
J.R. Simplot Co.
999 W. Main St., Suite 1300
Boise, ID 83702

FEDERAL EXPRESS:
7933 6352 3563

Dear Alan,

This letter conveys Forest Service approval of the Revised Draft Addendum 03 to the Final Sampling and Analysis Plan (SAP), Smoky Canyon Mine Remedial Investigation/Feasibility Study, dated February 27, 2012. The SAP Addendum 03 is a Deliverable under the 2009 Administrative Settlement Agreement and Order on Consent/Consent Order for Performance of Remedial Investigation and Feasibility Study for the Smoky Canyon Phosphate Mine under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA).

Please provide a cover page marked "Final" on or before April 21, 2012.

Sincerely,

MARY E. KAUFFMAN
Remedial Project Manager

MEK/dc

c: Fred Charles, Formation Environmental
Sandi Fisher, US FWS
Susan Hanson, Shoshone-Bannock Tribes
Monty Johnson, JR Simplot Company
Rick McCormick, CH2M Hill
Colleen O'Hara, BLM
Doug Tanner, IDEQ
Matt Wilkening, US EPA
Gerry Winter, IDEQ
Kelly Wright, Shoshone-Bannock Tribes
File 3.5

c by email: James Alexander, USDA OGC
Sherri Clark, Region 4 USDA FS



FORMATION
ENVIRONMENTAL

February 27, 2012

Mary Kauffman
USDA Forest Service – Caribou National Forest
410 East Hooper Street
Soda Springs, Idaho 83276



**Subject: Smoky Canyon Mine Remedial Investigation/Feasibility Study (RI/FS)
Revised Draft Addendum 03 (February 2012) to Final Sampling and Analysis Plan (SAP)**

Field Sampling Plan (FSP) – Additional Surface Water Sampling at LP-1 and CC-WY-01

Dear Mary:

Please find enclosed one unbound hardcopy of the Revised Draft Addendum 03 (February 2012)-Field Sampling Plan (FSP) which covers additional surface water sampling at the Pole Canyon ODA toe seep (LP-1) and the downstream surface water monitoring location on Crow Creek at the Wyoming state line (CC-WY-01). This document is an addendum to the Final Sampling and Analysis Plan (SAP) for the Smoky Canyon Mine RI/FS.

This revised draft addendum has been revised in response to Agency comments (dated January 31, 2012) on the draft addendum which Simplot submitted to the Agencies on October 20, 2011. Responses to Agency comments are included in this transmittal.

A CD containing an electronic version of this Revised Draft SAP Addendum 03-FSP is enclosed. The files are also available for download at:

http://www.formationenv.com/simplot_smokyri/

Username: (b) (6)

Password: (b) (6)

Please contact Monty Johnson or me if you have any questions.

Sincerely,
FORMATION ENVIRONMENTAL LLC

Fred Clark for

Steve Werner
Senior Consultant

Enclosures

cc: see attached distribution list

SMOKY CANYON MINE – DISTRIBUTION LIST

REMEDIAL INVESTIGATION/FEASIBILITY STUDY

Subject: Revised Draft Addendum 03 (February 2012) to Final RI/FS SAP (June 2010)
Date: Field Sampling Plan (FSP) – Additional Surface Water Sampling at LP-1 and CC-WY-01
 February 27, 2012

<u>X</u>	Mary Kauffman (1 unbound, 1 e-copy) USDA Forest Service Caribou/Targhee National Forest Soda Springs District Office Attn: Smoky Canyon Site Record 410 E. Hooper St. Soda Springs, ID 83276	<u>X</u>	Mary Kauffman (1 copy, 1 e-copy) USDA Forest Service Caribou/Targhee National Forest 1405 Hollipark Drive Idaho Falls, ID 83401
<u>X</u>	James Alexander (1 copy) USDA Office of the General Counsel 333 SW 1st Ave., Suite 45 Portland, OR 97204-3440	<u>X</u>	Alan Prouty (1 copy) J.R. Simplot Company P.O. Box 27, One Capital Center 999 Main Street, Ste 1300 Boise, ID 83707-0027
<u>X</u>	Douglas Tanner (1 copy, 1 e-copy) Idaho Dept. of Environmental Quality 444 Hospital Way, Suite 300 Pocatello, ID 83201	<u>X</u>	Monty Johnson (1 copy) J.R. Simplot Company P.O. Box 912 1130 West Highway 30 Pocatello, ID 83204
<u>X</u>	Colleen O'Hara (1 copy, 1 e-copy) Bureau of Land Management Pocatello Field Office 4350 South Cliffs Drive Pocatello, ID 83204	<u>X</u>	Dennis Facer (2 copies) Scott Lusty J.R. Simplot Company Smoky Canyon Mine 1890 Smoky Canyon Mine Road Afton, WY 83110
<u>X</u>	Sandi Fisher (1 copy, 1 e-copy) US Fish and Wildlife Service 4425 Burley Drive, Suite A Chubbuck, ID 83202	<u>X</u>	Gary Billman (1 copy) Idaho Department of Lands 3563 Ririe Highway Idaho Falls, ID 83401
<u>X</u>	Matt Wilkening (1 copy, 1 e-copy) EPA Region 10 1435 N. Orchard St. Boise, ID 83706	<u>X</u>	Kelly Wright (1 copy, 1 e-copy) Env. Waste Mgmt. Program Shoshone-Bannock Tribes PO Box 306 Fort Hall, ID 83203
<u>X</u>	Elizabeth McKenna (1 copy) EPA Region 10 Office of Regional Counsel (ORC-158) 1200 Sixth Avenue Seattle, WA 98101	<u>X</u>	Susan Hanson (1 copy, 1 e-copy) (b) (6)
<u>X</u>	Gerry Winter (1 copy, 1 e-copy) Idaho Dept. of Environmental Quality 1410 North Hilton Boise, ID 83706	<u>X</u>	Trudy Scott (1 copy, 1 e-copy) CH2M Hill 9191 South Jamaica Street Englewood, CO 80112
<u>X</u>	Rick McCormick (2 copies, 1 e-copy) Tim Mosko CH2M Hill 322 East Front Street Suite 200 Boise, ID 83702	<u>X</u>	Steve Werner (3 copies) Kathy Tegtmeyer Fred Charles Formation Environmental, LLC 2500 55 th Street Suite 200 Boulder, CO 80301

**Simplot Responses to Agency Comments (January 31, 2012) on
Draft Smoky Canyon Mine RI/FS Field Sampling Plan (FSP) Addendum 03 (October
2011) to the June (Final) 2010 Sampling and Analysis Plan (SAP)**

General Comments

- 1) The FSP Addendum notes that inclusion of additional sampling at the Pole Canyon Toe Seep (LP1) and Crow Creek at the Wyoming Border (CC-WY-01) in the RI/FS SAP was required by the Forest Service in a letter to Simplot dated June 9, 2011. The specific requirements are as follows:
 - **Section 3.3.2.1 Locations and Frequency, Stream Monitoring, Pages 3-20 & 3-21:** Based upon the letter dated June 2, 2011 from the USDA Forest Service to Simplot regarding Pole Canyon Discharge Sampling, the text in Addendum 01 should be revised to include sampling at the Wyoming border (sample location CC-WY-01) will be conducted weekly when any discharge is observed from the Pole Canyon ODA (PC ODA) until two weeks after any flow from the PC ODA has ceased. These samples will be in addition to the high-flow and low-flow conditions or twice per year sampling as stated in the paragraph. Additionally, Table 3-1 should be revised to indicate this new sampling requirement.
 - **Section 3.3.2.1 Locations and Frequency, Seep Water Monitoring, Page 3-21:** This paragraph should include the increase in sampling as required in the letter referenced in the above comment. As indicated in the letter, sampling at Pole Canyon ODA will occur twice a week for selenium and sulfate while there is sufficient flow up to, and beyond, the confluence with the pipeline discharge station. Additionally, Table 3-1 should be revised to indicate this new sampling requirement.

However, changes to the document do not accurately reflect the changes as required above. Rather than adding sampling at CC-WY-01 weekly when any discharge is observed from the PC ODA until two weeks after any flow from the PC ODA has ceased as stated above, the current work adds the qualifier of a specific volume of flow for a minimum number of days and/or standing water observed in the infiltration basin before initiation of sampling would begin. Please revise the Addendum to be consistent with the original Forest Service comments.

Response: The trigger for additional sample collection is the same for both LP-1 and CC-WY-01. Specifically, when there is sufficient flow from the ODA toe seep (LP-1) to reach and comingle with flow at the pipeline discharge station (LP-PD), samples will be collected twice per week at LP-1. Under the same conditions, samples will be collected weekly at CC-WY-01 and will continue for two weeks after such comingling flow has ceased. The text has been revised accordingly.

Specific Comments

- 2) **Page 1, Section 1.1, 1" paragraph, 1" sentence:** Please revise the latter part of the sentence for consistency with the Agency requirements noted in the comments above (delete when flows at LP-1 are significant and replace with when any discharge is observed from the PC ODA).

Response: The latter part of this sentence has been deleted and replaced with "...in response to flow from LP-1 reaching and comingling with flow at the pipeline discharge station (LP-PD)."

- 3) **Page 1, Section 1.2, 1" paragraph:** The text states "At the Wyoming border location on Crow Creek (CC-WY-01), the monthly sampling through fall is intended to represent conditions associated with the draining of the alluvial system along the east flank of Smoky Canyon Mine and declining water volumes that may increase selenium concentrations in Crow Creek as a consequence of the spring releases out of the Pole Canyon ODA." While this may be a technical explanation of what water the requisite sampling might be capturing, the *intent* of the sampling is to document compliance (or not) with surface water standards at the Wyoming border, since the Wyoming DEQ has expressed an avid interest in COPC concentrations at the border between Wyoming and Idaho. Please revise the text accordingly.

Response: The original text was worded consistent with the request from the Agencies for additional sampling at CC-WY-01. For this location, as for all other stream locations sampled under the RI, analytical results will be compared with screening-level benchmarks. As requested by this comment, text has been added to state that "Also, results from surface water sampling at CC-WY-01 are intended for assessment of compliance with surface water standards in Crow Creek at the Idaho-Wyoming border."

- 4) **Page 2, Section 1.3, 3" paragraph:** Please revise for accuracy and reference the initiation date of the Removal Action (initiated in 2006 per the 2006 Settlement Agreement and Action Memorandum). Citing the dates of implementation could cause confusion on whether there was a subsequent RA at Pole Canyon.

Response: As requested by this comment, text has been added to state that "In 2006, Simplot initiated a Removal Action (RA) in Pole Canyon in accordance with the October 2006 Settlement Agreement entered into with the U.S. Forest Service (USFS), U.S. Environmental Protection Agency, and Idaho Department of Environmental Quality, which includes the 2006 Action Memorandum." References to implementation in 2007 and 2008 have been removed.

- 5) **Page 3, Section 1.4, 1" paragraph, 1" sentence:** Please revise to clarify that samples outside of established routine monitoring were collected in 2011 at the PC ODA seep (LP-1) and at CC-WY-01) in response to Forest Service requirements to do so.

Response: As requested by this comment, the text has been clarified to state that "... samples were collected in 2011 as required by the USFS in response to spring high flows at the ODA toe seep which were increased by the temporary diversion of upper Pole Canyon Creek flows into the infiltration basin during this period."

- 6) **Pages 3-4, Section 1.4, bullets:** Please revise according to the General Comment #1 above.

Response: The bullets have been removed and the text has been revised consistent with the response to General Comment 1, above.

FINAL

Addendum 04



**Smoky Canyon Mine
Remedial Investigation/Feasibility Study
Sampling and Analysis Plan**

November 2012

Focused Shallow Groundwater Sampling in Northern Sage Valley

Additional Sediment Sampling in Pole Canyon Creek Channel in Northern Sage Valley

Focused Soil Sampling in Northern Sage Valley

Prepared for:

J.R. Simplot Company
Smoky Canyon Mine
1890 Smoky Canyon Mine Road
Afton, WY 83110

P.O. Box 27, One Capital Center
999 Main Street, Suite 1300
Boise, ID 83707-0027

Prepared by:

FORMATION
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Formation Environmental, LLC
2500 55th Street, Suite 200
Boulder, Colorado 80301

FORMATION
ENVIRONMENTAL



November 6, 2012

Mary Kauffman
USDA Forest Service – Caribou National Forest
410 East Hooper Street
Soda Springs, Idaho 83276

**Subject: Smoky Canyon Mine Remedial Investigation/Feasibility Study (RI/FS)
Final Addendum 04 – Final Sampling and Analysis Plan (SAP)**

**Focused Shallow Groundwater Sampling in Northern Sage Valley
Additional Sediment Sampling in Pole Canyon Creek Channel in Northern Sage Valley
Focused Soil Sampling in Northern Sage Valley**

Dear Mary:

Please find enclosed one unbound hardcopy of Final Addendum 04 to the Final Sampling and Analysis Plan (SAP) for the Smoky Canyon Mine RI/FS. This document is being submitted on behalf of the J.R. Simplot Company (Simplot) in accordance with the August 2009 Settlement Agreement/Consent Order, and in response to Agency comments (dated October 4, 2012) on Draft Addendum 04 (dated September 26, 2012). Simplot responses to Agency comments are also provided.

This addendum presents plans for additional sampling of shallow groundwater, sediment, and soil in northern Sage Valley. The plans reference previously approved protocols presented in the Final RI/FS SAP, and present additional information to describe specific objectives and locations for this sampling.

Along with this hardcopy, a CD is enclosed that contains the Final RI/FS SAP including previous addenda and Final Addendum 04. The electronic files are also available for download at:

<https://smokyrifs.formationclient.com/>

Username: (b) (6)

Password (case sensitive): (b) (6)

Please contact Monty Johnson or me if you have any questions.

Sincerely,
FORMATION ENVIRONMENTAL LLC

A handwritten signature in cursive script that reads "Fred Charles".

Fred Charles, Ph.D., P.E.
Senior Engineer

Enclosures

cc: see attached distribution list

SMOKY CANYON MINE – DISTRIBUTION LIST

REMEDIAL INVESTIGATION/FEASIBILITY STUDY

Subject: Final Addendum 04 (November 2012) – Final RI/FS Sampling and Analysis Plan (SAP)
Date: November 6, 2012

<u>X</u>	Mary Kauffman (1 unbound, 1 e-copy) USDA Forest Service Caribou/Targhee National Forest Soda Springs District Office Attn: Smoky Canyon Site Record 410 E. Hooper St. Soda Springs, ID 83276	<u>X</u>	Mary Kauffman (1 copy, 1 e-copy) USDA Forest Service Caribou/Targhee National Forest 1405 Hollipark Drive Idaho Falls, ID 83401
<u>X</u>	James Alexander (1 copy) USDA Office of the General Counsel 333 SW 1st Ave., Suite 45 Portland, OR 97204-3440	<u>X</u>	Alan Prouty (1 copy) J.R. Simplot Company P.O. Box 27, One Capital Center 999 Main Street, Ste 1300 Boise, ID 83707-0027
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<u>X</u>	Matt Wilkening (1 copy, 1 e-copy) EPA, Idaho Operations Office 950 W. Bannock St., Suite 900 Boise, ID 83702	<u>X</u>	Kelly Wright (1 copy, 1 e-copy) Env. Waste Mgmt. Program Shoshone-Bannock Tribes PO Box 306 Fort Hall, ID 83203
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<u>X</u>	Gerry Winter (1 copy, 1 e-copy) Idaho Dept. of Environmental Quality 1410 North Hilton Boise, ID 83706	<u>X</u>	Doug Scott (1 copy, 1 e-copy) CH2M Hill 59 Lilac Court Pagosa Springs, CO 81147
<u>X</u>	Rick McCormick (2 copies, 1 e-copy) Tim Mosko CH2M Hill 322 East Front Street Suite 200 Boise, ID 83702	<u>X</u>	Steve Werner (2 copies) Fred Charles Formation Environmental, LLC 2500 55 th Street Suite 200 Boulder, CO 80301

**Simplot Responses to Agency Comments (October 4, 2012) on
“Draft Sampling and Analysis Plan Addendum 04, Smoky Canyon Mine RI/FS”
(September 26, 2012)**

General Comments

- 1) Due to the very dry conditions this year, the Agencies recommend that in addition to the proposed work this fall, the shallow piezometers be sampled again next spring (see specific comments #3 and #4 below). In consideration of the schedule for the RI/FS, the Agencies recommend that any outstanding work outside the current schedule for completion of the RI Report could be submitted later in next summer as an addendum.

Response: As requested, Simplot will sample shallow groundwater from the piezometers in the fall of 2012 and again in the spring of 2013. Analytical results of the spring 2013 sampling event will be included in the RI Report as a report addendum or in a revision to the draft document. Plans for this additional spring sampling event have been added to the SAP addendum.

Specific Comments

- 2) **Page 3, Section 1.1, 2nd paragraph:** The text should include a general statement listing the possible selenium sources to the focused study area if selenium concentrations in the local shallow groundwater samples are not similar to those for samples previously collected at GW-22.

Response: Text has been added referencing other possible selenium sources in the focus area, including contact of Pole Canyon Creek flow with soil and vegetation in the area, sediment deposition from upstream sources (i.e., the Pole Canyon ODA), and historical placement of salt licks in the area.

- 3) **Page 4, Section 1.2, 2nd full paragraph, Figures 1 and 3:** To assist the reader with understanding the locations of SPV-1 and SPV-4, please add SPV-1 to Figures 1 and 3 and include a note on the figures that SPV-4 is not shown because it is off the figures to the south.

Response: Figures 1 and 2 are provided to support the discussion on background information which includes previous sample collection at SVP-1 and SVP-4. Therefore, these two figures have been revised to indicate locations of SVP-1 and SVP-4 off the figures.

- 4) **Page 4, Section 1.2, next to last paragraph:** The last sentence of this paragraph states “The area may also be influenced by irrigation in Sage Valley.” In comparing Figures 1 and 2 and the latest Google Earth image, it appears that this wet area may be influenced by irrigation water. First, it appears Pole Canyon Creek was diverted to the west side of the area of interest from an old channel slightly to the east of the current channel. Second, It appears there are other, possibly

dormant irrigation ditches cutting across the wet area and parallel to the western boundary of the wet area. Determining the source of the water may require shallow water level data collected this fall and again next spring in concert with observations of the irrigations diversion patterns next spring.

Response: See response to General Comment 1. Additional text has been added to Section 1.3 to include identification of portions of the wet area receiving irrigation water during the spring 2013 sampling event.

- 5) **Page 5, Section 1.3, last paragraph:** All three piezometers should be left in place and resampled in the spring. After the spring sampling is complete, the USFS will make a decision regarding whether or not any of the piezometers will be removed, based on the results of the fall and spring sampling. Since any of the three piezometers may remain in place, the protective well casings should be installed over all of the piezometers.

Response: See response to General Comment 1. Additional text has been added to Section 1.3 to address this comment. To ensure protection of the three piezometers after the fall 2012 sampling, until samples are collected in the spring of 2013, T-post/barbed wire fencing will be installed individually around each piezometer to provide protection from cattle. After the spring 2013 sampling event, if any of the piezometers should remain for a longer time, then a more permanent form of protection (i.e., metal casing) will be installed.

- 6) **Page 7, Section 2.1, 2nd paragraph, last sentence:** Please provide the reference documenting the area-wide background concentration of 2.4 mg/Kg for sediment.

Response: A screening-level benchmark of 2 mg/Kg for selenium in sediment has been adopted in Revised Draft 2, 2011 Data Summary Report (Formation, 2012), so the discussion in this SAP addendum has been revised accordingly.

- 7) **Page 8, Section 2.2, partial sentence at top of page:** The selenium concentrations in sediment from sample location LPT5 were two to three times higher than the selenium screening level of 2.4 mg/kg. It is misleading to refer to this exceedence as "slightly higher." The phrase "... and only slightly higher than. . ." should be deleted from the sentence.

Response: The requested change to the text has been made, and discussion has been added to represent selenium concentrations at LPT5 relative to the screening level and upgradient concentrations.

- 8) **Page 8, Section 2.3, and Figure 3:** It is important to understand how the low-lying wet area may be contributing to selenium concentrations in sediments downgradient from the wet area. Therefore, an additional sediment sampling station should be identified downgradient from LPT9D between LPT9D and the North Fork of Sage Creek. If desired by Simplot, one of the upgradient sediment sampling stations between LPT5 and LPT9U could be eliminated. If one of these stations is eliminated, the remaining stations between LPT5 and LPT9U should be re-

positioned to provide sediment sampling stations that are approximately equidistant from each other.

Response: The changes have been made as suggested, as discussed in the text and shown on revised Figure 3.

9) Page 10, Section 3.3 and Figure 3:

- A.** The north-south soil transect should be expanded by one sample in each direction to better characterize the potential extent of soil contamination. To the south, data indicate the soil concentrations were elevated as far south as SV-16. The transect should be extended to the south to include one additional sample located approximately mid-way between SP-16 and SV-41. To the north, data indicate the vegetation concentrations were elevated as far north as SV-10. The transect should be extended to the north to include one additional sample located slightly north of SV-10 and in line with SV-30/SV-31.
- B.** The purpose of soil sampling stations SV-35 and SV-39 is not understood. These stations are considerably outside the low-lying wet area, and stations SV-34 and SV-38 should be adequate to demonstrate the limits of the soil contamination.
- C.** The soils in the areas in the northwest and southwest corners of the low lying wet area are not well characterized. Additional soil sampling stations should therefore be identified in the northwest and southwest corners of the low lying wet area. If desired by Simplot, stations SV-35 and SV-39 could be moved to the northwest and southwest corners of the low lying wet area.

Response: The changes have been made as suggested, as shown on revised Figure 3.



United States
Department of
Agriculture

Forest
Service

Caribou-Targhee
National Forest

1405 Hollipark Drive
Idaho Falls, ID 83401
208-524-7500

File Code: 2160

Date: October 4, 2012

Alan Prouty
J.R. Simplot Co.
999 Main St., Suite 1300
Boise, ID 83702

FEDEX: 799118640180



Dear Alan,

Enclosed are the Agencies' comments on the Draft Remedial Investigation and Feasibility Study (RI/FS) Sampling and Analysis Plan (SAP) Addendum 04 received September 27, 2012. The RI/FS SAP Addendum 04 is a Deliverable under the 2009 Administrative Settlement Agreement and Order on Consent/Consent Order for Performance of Remedial Investigation and Feasibility Study under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA).

The Agencies are requesting minor modifications to the work proposed in SAP Addendum 04. In order for the work to proceed as soon as possible this fall, the Forest Service (FS) and Simplot will need to coordinate resolution of the attached comments via telephone, preferably this week. The FS approves SAP Addendum 04 upon resolution and agreement of the attached comments by Simplot and the FS, and work can proceed immediately thereafter. Please provide a Final SAP Addendum 04 on or before November 9, 2012 incorporating the agreed upon modifications.

Sincerely,

MARY E. KAUFFMAN
Remedial Project Manager

Enclosure

cc: Sandi Fisher; USFW
Colleen O'Hara; BLM
Douglas Tanner; IDEQ
Kelly Wright; Shoshone-Bannock Tribes
Gerry Winter; IDEQ
Matt Wilkening; EPA
Susan Hanson; Shoshone-Bannock Tribes
Monty Johnson; J.R. Simplot Company
Fred Charles, Formation Environmental LLC
Rick McCormick; CH2M Hill



Agency Comments

Draft Smoky Canyon RI/FS Sampling and Analysis Plan Addendum 04, dated September 2012

October 4, 2012

Mary E. Kauffman

USFS Remedial Project Manager, Smoky Canyon Mine

General Comments

- 1) Due to the very dry conditions this year, the Agencies recommend that in addition to the proposed work this fall, the shallow piezometers be sampled again next spring (see specific comments #3 and #4 below). In consideration of the schedule for the RI/FS, the Agencies recommend that any outstanding work outside the current schedule for completion of the RI Report could be submitted later in next summer as an addendum.

Specific Comments

- 2) **Page 3, Section 1.1, 2nd paragraph:** The text should include a general statement listing the possible selenium sources to the focused study area if selenium concentrations in the local shallow groundwater samples are not similar to those for samples previously collected at GW-22.
- 3) **Page 4, Section 1.2, 2nd full paragraph, Figures 1 and 3:** To assist the reader with understanding the locations of SPV-1 and SPV-4, please add SPV-1 to Figures 1 and 3 and include a note on the figures that SPV-4 is not shown because it is off the figures to the south.
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- 5) **Page 5, Section 1.3, last paragraph:** All three piezometers should be left in place and resampled in the spring. After the spring sampling is complete, the USFS will make a decision regarding whether or not any of the piezometers will be removed, based on the results of the fall and spring sampling. Since any of the three piezometers may remain in place, the protective well casings should be installed over all of the piezometers.
- 6) **Page 7, Section 2.1, 2nd paragraph, last sentence:** Please provide the reference documenting the area-wide background concentration of 2.4 mg/Kg for sediment.
- 7) **Page 8, Section 2.2, partial sentence at top of page:** The selenium concentrations in sediment from sample location LPT5 were two to three times higher than the selenium screening level of 2.4 mg/kg. It is misleading to refer to this exceedence as "slightly higher." The phrase "... and only slightly higher than..." should be deleted from the sentence.

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9) **Page 10, Section 3.3 and Figure 3:**

- A. The north-south soil transect should be expanded by one sample in each direction to better characterize the potential extent of soil contamination. To the south, data indicate the soil concentrations were elevated as far south as SV-16. The transect should be extended to the south to include one additional sample located approximately mid-way between SP-16 and SV-41. To the north, data indicate the vegetation concentrations were elevated as far north as SV-10. The transect should be extended to the north to include one additional sample located slightly north of SV-10 and in line with SV-30/SV-31.
- B. The purpose of soil sampling stations SV-35 and SV-39 is not understood. These stations are considerably outside the low-lying wet area, and stations SV-34 and SV-38 should be adequate to demonstrate the limits of the soil contamination.
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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
IDAHO OPERATIONS OFFICE
1435 North Orchard Street
Boise, Idaho 83706

October 3, 2012

Mary Kauffman
Environmental Coordinator
Caribou-Targhee National Forest
1405 Hollipark Dr.
Idaho Falls, Idaho 83401

Re: Remedial Investigation/Feasibility Study, Sampling and Analysis Plan, Smoky Canyon Mine

Dear Ms. Kauffman:

EPA has completed its review of the Remedial Investigation/Feasibility Study, Sampling and Analysis Plan, Smoky Canyon Mine which we received via email on September 26th. EPA had no comments on this document and an email to that effect was submitted on September 28th, 2012. This represents a formal submittal for the Administrative Record.

If you have any questions regarding these comments please contact me at 208/378-5760.

Sincerely,

A handwritten signature in cursive script that reads "R. Matthew Wilkening".

R. Matthew Wilkening
Smoky Canyon Project Manager

cc: Trina Burgin, IDEQ-Pocatello, email only
Gerry Winter, IDEQ-HQ, email only
Kelly Wright and Susan Hanson, Shoshone Bannock Tribes
Sandi Fisher, USF&W-Chubbuck, email only
USFS, Admin. Record, Soda Spring Distr.
Beth Sheldrake, EPA-ECL, email only
Elizabeth McKenna, EPA-ORC, email only



United States
Department of
Agriculture

Forest
Service

Caribou-Targhee
National Forest

1405 Hollipark Drive
Idaho Falls, ID 83401
208-524-7500

File Code: 2160

Date: January 31, 2012



Alan Prouty
J.R. Simplot Co.
999 West Main St., Suite 1300
Boise, ID 83702

FEDERAL EXPRESS:
7931 7432 2622

Dear Alan,

Enclosed are Agency comments on the Draft Addendum 03 to the Smoky Canyon Remedial Investigation/Feasibility Study (RI/FS) Addition to Section 3.0, Sampling and Analysis Plan (SAP), Field Sampling Plan (FSP), dated October 2011. The SAP is a Deliverable under the 2009 Administrative Settlement Agreement and Order on Consent/Consent Order for Performance of a Remedial Investigation and Feasibility Study for the Smoky Canyon Phosphate Mine under the Comprehensive Environmental Response, Compensation and Liability Act.

Please submit a revised draft SAP Addendum 03 that incorporates the enclosed Agency comments on or before February 28, 2012.

You may contact me at 208-557-5779 with any questions you may have regarding this matter.

Sincerely,

MARY E. KAUFFMAN
Remedial Project Manager

MEK/dc
enclosure

c: Fred Charles, Formation Environmental
Sandi Fisher, USFS
Susan Hanson, Shoshone-Bannock Tribes
Monty Johnson, JR Simplot Company
Rick McCormick, CH2MHill
Colleen O'Hara, BLM
Douglas Tanner, IDEQ
Matt Wilkening, USEPA
Gerry Winter, IDEQ
Kelly Wright, Shoshone-Bannock Tribes
File 3.3



Agency Comments

Draft Smoky Canyon Mine Remedial Investigation/Feasibility Study (RI/FS) Field Sampling Plan (FSP)
Addendum 03 to the June (Final) 2010 Sampling and Analysis Plan (SAP), dated October 2011.

January 31, 2012

Mary E. Kauffman

US Forest Service Remedial Project Manager, Smoky Canyon Mine

General Comments

- 1) The FSP Addendum notes that inclusion of additional sampling at the Pole Canyon Toe Seep (LP-1) and Crow Creek at the Wyoming Border (CC-WY-01) in the RI/FS SAP was required by the Forest Service in a letter to Simplot dated June 9, 2011. The specific requirements are as follows:

- **Section 3.3.2.1 Locations and Frequency, Stream Monitoring, Pages 3-20 & 3-21:**

Based upon the letter dated June 2, 2011 from the USDA Forest Service to Simplot regarding Pole Canyon Discharge Sampling, the text in Addendum 01 should be revised to include sampling at the Wyoming border (sample location CC-WY-01) will be conducted weekly when any discharge is observed from the Pole Canyon ODA (PC ODA) until two weeks after any flow from the PC ODA has ceased. These samples will be in addition to the high-flow and low-flow conditions or twice per year sampling as stated in the paragraph. Additionally, Table 3-1 should be revised to indicate this new sampling requirement.

- **Section 3.3.2.1 Locations and Frequency, Seep Water Monitoring, Page 3-21:**

This paragraph should include the increase in sampling as required in the letter referenced in the above comment. As indicated in the letter, sampling at Pole Canyon ODA will occur twice a week for selenium and sulfate while there is sufficient flow up to, and beyond, the confluence with the pipeline discharge station. Additionally, Table 3-1 should be revised to indicate this new sampling requirement.

However, changes to the document do not accurately reflect the changes as required above. Rather than adding sampling at CC-WY-01 weekly when any discharge is observed from the PC ODA until two weeks after any flow from the PC ODA has ceased as stated above, the current work adds the qualifier of a specific volume of flow for a minimum number of days and/or standing water observed in the infiltration basin before initiation of sampling would begin. Please revise the Addendum to be consistent with the original Forest Service comments.

Specific Comments

- 2) **Page 1, Section 1.1, 1st paragraph, 1st sentence:** Please revise the latter part of the sentence for consistency with the Agency requirements noted in the comments above (delete when flows at LP-1 are significant and replace with when any discharge is observed from the PC ODA).
- 3) **Page 1, Section 1.2, 1st paragraph:** The text states "At the Wyoming border location on Crow Creek (CC-WY-01), the monthly sampling through fall is intended to represent conditions associated with the draining of the alluvial system along the east flank of Smoky Canyon Mine and declining water volumes that may increase selenium concentrations in Crow Creek as a consequence of the spring releases out of the Pole Canyon ODA." While this may be a technical

explanation of what water the requisite sampling might be capturing, the *intent* of the sampling is to document compliance (or not) with surface water standards at the Wyoming border, since the Wyoming DEQ has expressed an avid interest in COPC concentrations at the border between Wyoming and Idaho. Please revise the text accordingly.

- 4) **Page 2, Section 1.3, 3rd paragraph:** Please revise for accuracy and reference the initiation date of the Removal Action (*initiated* in 2006 per the 2006 Settlement Agreement and Action Memorandum). Citing the dates of *implementation* could cause confusion on whether there was a subsequent RA at Pole Canyon.
- 5) **Page 3, Section 1.4, 1st paragraph, 1st sentence:** Please revise to clarify that samples outside of established routine monitoring were collected in 2011 at the PC ODA seep (LP-1) and at CC-WY-01) in response to Forest Service requirements to do so.
- 6) **Pages 3-4, Section 1.4, bullets:** Please revise according to the General Comment #1 above.



United States
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Caribou-Targhee
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1405 Hollipark Drive
Idaho Falls, ID 83401
208-524-7500

File Code: 2160

Date: January 31, 2012



Alan Prouty
J. R. Simplot Co.
999 West Main St., Suite 1300
Boise, ID 83702

FEDERAL EXPRESS:
7931 7432 2622

Dear Alan,

This letter conveys Forest Service approval for the Draft Smoky Canyon Mine Remedial Investigation/Feasibility Study (RI/FS) Revised Section 2.0, Sampling and Analysis Plan (SAP), Addendum 03- Quality Assurance Project Plan (QAPP) dated October 20, 2011. This is an Addendum to the Final RI/FS SAP dated June 2010. This Addendum is a Deliverable under the 2009 Administrative Settlement Agreement and Order on Consent/ Consent Order for Performance of a Remedial Investigation and Feasibility Study for the Smoky Canyon Phosphate Mine under the Comprehensive Environmental Response, Compensation and Liability Act. Please provide Final cover pages on or before February 16, 2012.

Please contact me at 208-557-5779 with any questions you may have regarding this matter.

OL

Sincerely,

MARY E. KAUFFMAN
Remedial Project Manager

MEK/dc

c: Sandi Fisher, USFS
Susan Hanson, Shoshone-Bannock Tribes
Monty Johnson, JR Simplot Company
Rick McCormick, CH2MHill
Colleen O'Hara, BLM
Douglas Tanner, IDEQ
Steve Werner, Formation Environmental
Matt Wilkening, USEPA
Gerry Winter, IDEQ
Kelly Wright, Shoshone-Bannock Tribes
File 3.3

c by email: James Alexander, USDA OGC
Sherri Clark, R4 USFS



FORMATION
ENVIRONMENTAL



September 26, 2012

Mary Kauffman
USDA Forest Service – Caribou National Forest
410 East Hooper Street
Soda Springs, Idaho 83276

**Subject: Smoky Canyon Mine Remedial Investigation/Feasibility Study (RI/FS)
Addendum 04 – Final Sampling and Analysis Plan (SAP)**

**Focused Shallow Groundwater Sampling in Northern Sage Valley
Additional Sediment Sampling in Pole Canyon Creek Channel in Northern Sage Valley
Focused Soil Sampling in Northern Sage Valley**

Dear Mary:

Please find enclosed one unbound hardcopy of Addendum 04 to the Final Sampling and Analysis Plan (SAP) for the Smoky Canyon Mine RI/FS. We prepared this submittal in response to agency comments (dated September 4, 2012) on the Smoky RI/FS 2011 Data Summary Report.

This addendum presents plans for additional sampling of shallow groundwater, sediment, and soil in northern Sage Valley. The plans reference previously approved protocols presented in the Final RI/FS SAP, and present additional information to describe specific objectives and locations for the planned sampling. As previously discussed, we are planning to collect the proposed samples this fall pending your approval of this addendum.

Along with this hardcopy, a CD containing the Final RI/FS SAP (including previous addenda) and Addendum 04 is enclosed. The electronic files are also available for download at:

<https://smokyrifs.formationclient.com/>

Username (b) (6)

Password (case sensitive): (b) (6)

Please contact Monty Johnson or me if you have any questions.

Sincerely,
FORMATION ENVIRONMENTAL LLC

A handwritten signature in cursive script that reads "Fred Charles".

Fred Charles, Ph.D., P.E.
Senior Engineer

Enclosures

cc: see attached distribution list

SMOKY CANYON MINE – DISTRIBUTION LIST

REMEDIAL INVESTIGATION/FEASIBILITY STUDY

Subject: Addendum 04 (September 2012) – Final RI/FS Sampling and Analysis Plan (SAP)
Date: September 26, 2012

<u>X</u>	Mary Kauffman (1 unbound, 1 e-copy) USDA Forest Service Caribou/Targhee National Forest Soda Springs District Office Attn: Smoky Canyon Site Record 410 E. Hooper St. Soda Springs, ID 83276	<u>X</u>	Mary Kauffman (1 copy, 1 e-copy) USDA Forest Service Caribou/Targhee National Forest 1405 Hollipark Drive Idaho Falls, ID 83401
<u>X</u>	James Alexander (1 copy) USDA Office of the General Counsel 333 SW 1st Ave., Suite 45 Portland, OR 97204-3440	<u>X</u>	Alan Prouty (1 copy) J.R. Simplot Company P.O. Box 27, One Capital Center 999 Main Street, Ste 1300 Boise, ID 83707-0027
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FINAL

US EPA

OCT 16 2014

Addendum 05

IDAHO OPERATIONS OFFICE

**Smoky Canyon Mine
Remedial Investigation/Feasibility Study
Sampling and Analysis Plan**

J.R. Simplot Company

October 2014 (Addendum 05)

Additional Wells Formation Aquifer Investigation in the Panel A Area

Prepared for:

J.R. Simplot Company

Smoky Canyon Mine
1890 Smoky Canyon Mine Road
Afton, WY 83110

P.O. Box 27, One Capital Center
999 Main Street, Suite 1300
Boise, ID 83707-0027

Prepared by:

FORMATION

ENVIRONMENTAL

Formation Environmental, LLC
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CORPORATE – POCATELLO OFFICE

US EPA

NOV 26 2014

IDAHO OPERATIONS OFFICE

November 24, 2014

Mary Kauffman
USDA Forest Service – Caribou National Forest
410 East Hooper Street
Soda Springs, Idaho 83276

**Subject: Smoky Canyon Mine Remedial Investigation/Feasibility Study (RI/FS)
Final Sampling and Analysis Plan (SAP)
Addendum 05 – Revised Standard Operating Procedure – Groundwater
Sampling and Water Level Measurements at Monitoring Wells and
Piezometers**

Dear Mary:

Please find enclosed one unbound hardcopy of the revised Standard Operating Procedure (SOP) No. 4 to be included with the previously submitted (October 14, 2014) Final Addendum 05 to the Final Sampling and Analysis Plan (SAP) for the Smoky Canyon Mine RI/FS. The J.R. Simplot Company (Simplot) is submitting this document, in accordance with the August 2009 Settlement Agreement/Consent Order, to address incorporation of an additional groundwater sampling method utilizing the HydraSleeve™ technology.

This revised SOP is included in the CD provided with SAP Addendum 06, which is submitted concurrently.

The electronic files are available for download at:

<https://smokyriifs.formationclient.com/>

Username: (b) (6)

Password (case sensitive): (b) (6)

Please contact me if you have any questions.

Sincerely,

Monty Johnson
Environmental Engineering Manager

Enclosures

cc: see attached distribution list

SMOKY CANYON MINE – DISTRIBUTION LIST

REMEDIAL INVESTIGATION/FEASIBILITY STUDY

Subject: Final Sampling and Analysis Plan (SAP)
Addendum 05 – Revised Groundwater Sampling Standard Operating Procedure (SOP)
Date: November 24, 2014

<u>X</u>	Mary Kauffman (1 unbound hard copy) USDA Forest Service Caribou/Targhee National Forest Soda Springs District Office Attn: Smoky Canyon Site Record 410 E. Hooper St. Soda Springs, ID 83276	<u>X</u>	Mary Kauffman (1 hard copy) USDA Forest Service Caribou/Targhee National Forest 1405 Hollipark Drive Idaho Falls, ID 83401
<u>X</u>	James Alexander (1 CD only) USDA Office of the General Counsel 1220 SW Third Avenue Floor G, Room G002 (mail room) Portland, OR 97204	<u>X</u>	Alan Prouty, Burl Ackerman (2 hard copies) J.R. Simplot Company P.O. Box 27, One Capital Center 999 Main Street, Ste 1400 (mail room) Boise, ID 83707-0027
<u>X</u>	Wayne Crowther (1 hard copy) Idaho Dept. of Environmental Quality 444 Hospital Way, Suite 300 Pocatello, ID 83201	<u>X</u>	Monty Johnson (3 hard copies) Dennis Facer, Lori Hamann J.R. Simplot Company P.O. Box 912, 1130 West Highway 30 Pocatello, ID 83204
<u>X</u>	Colleen O'Hara-Epperly (1 hard copy) Bureau of Land Management Pocatello Field Office 4350 South Cliffs Drive Pocatello, ID 83204	<u>X</u>	Scott Lusty (4 hard copies) John Cunningham, Grant Williams, file copy J.R. Simplot Company, Smoky Canyon Mine 1890 Smoky Canyon Mine Road Afton, WY 83110
<u>X</u>	Sandi Fisher (1 hard copy) US Fish and Wildlife Service 4425 Burley Drive, Suite A Chubbuck, ID 83202	<u>X</u>	Gary Billman (1 hard copy) Idaho Department of Lands 3563 East Ririe Highway Idaho Falls, ID 83401
<u>X</u>	Matt Wilkening (1 hard copy) EPA, Idaho Operations Office 950 W. Bannock St., Suite 900 Boise, ID 83702	<u>X</u>	Kelly Wright (1hard copy) Env. Waste Mgmt. Program Shoshone-Bannock Tribes P.O. Box 306 Fort Hall, ID 83203
<u>X</u>	Ted Yackulic (1 CD only) EPA Region 10 Office of Regional Counsel (ORC-158) 1200 Sixth Avenue Seattle, WA 98101	<u>X</u>	Susan Hanson (1 hard copy) (b) (6)
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<u>X</u>	Rick McCormick (2 hard copies) Tim Mosko CH2M Hill 322 East Front Street Suite 200 Boise, ID 83702	<u>X</u>	Fred Charles (3 hard copies) Buz Cotton, Len Mason Formation Environmental, LLC 2500 55 th Street Suite 200 Boulder, CO 80301

NOTE: Each hard copy submittal includes 1 complete CD of the SAP Addenda and the complete SAP.

J.R. SIMPLOT COMPANY – SMOKY CANYON MINE

STANDARD OPERATING PROCEDURE No. 4

**GROUNDWATER SAMPLING AND WATER LEVEL MEASUREMENTS AT MONITORING
WELLS AND PIEZOMETERS**

1.0 SCOPE AND APPLICABILITY

This Standard Operating Procedure (SOP) describes the protocol to be followed during measurement of water levels and depths of monitoring wells and piezometers, and for water quality sampling from monitoring wells. The procedures presented herein are intended to be general in nature and, as the work progresses and when warranted, appropriate revisions may be made when approved in writing by the Project Manager. These procedures are applicable when referenced by a monitoring or sampling and analysis plan.

2.0 BASIS FOR METHODOLOGY

The methods and procedures described in this SOP were developed from these sources:

- U.S. Environmental Protection Agency, Region 9. *Standard Operating Procedure for the Standard/Well-Volume Method for Collecting a Ground-Water Sample from Monitoring Wells for Site Characterization.*
- U.S. Environmental Protection Agency, Region 1, 1996. *Low Stress (low flow) Purging and Sampling Procedure for the Collection of Ground Water Samples from Monitoring Wells.*
- U.S. Environmental Protection Agency, May 2002. *Ground-Water Sampling Guidelines for Superfund and RCRA Project Managers.*
- U.S. Geological Survey, variously dated, National field manual for the collection of water-quality data: U.S. Geological Survey Techniques of Water-Resources Investigations, Book 9, Chapters A1-A9. Available online at <http://pubs.water.usgs.gov/twri9A>.

3.0 WATER LEVEL AND WELL DEPTH MEASUREMENT PROCEDURES

Prior to performing water level and well depth measurements, the construction details and previous measurements for each well or piezometer shall be reviewed by the field

geologist or other personnel so any anomalous measurements may be identified. Well construction details and previous measurements shall be available in the field for review.

In general, water-level measurements shall be performed before groundwater is removed from the well by purging or sampling.

3.1 Equipment

Equipment that may be necessary to perform measurements (depending on measurements to be performed):

- Well/piezometer construction details.
- An electronic water-level meter with accuracy of 0.01 foot.
- Water Level Monitoring Record Sheet.
- Weighted steel surveyor's tape measuring to the nearest 0.1 foot.

3.2 Measuring Point

A measuring point (MP) shall be selected and marked for each monitoring well and piezometer in which water level measurements will be made. Generally, the MP will be on the north side of the top of the well casing. The MP will be permanently marked using an indelible marker or a notch cut into the PVC casing. When the top-of-casing elevation of a monitoring well or piezometer is surveyed, the licensed surveyor shall measure the MP elevation and reference this measurement to an appropriate datum (such as feet above mean sea level).

3.3 Water Level Measurements

When water levels are measured to describe the groundwater potentiometric surface, the water level will be measured prior to purging. All wells to be gauged during a monitoring event and used to construct the potentiometric surface should have water levels measured within the same 24 hour period. All water level measurements will be recorded to the nearest hundredth of one foot. Instruments used for each measurement will be noted on the Groundwater Sampling Record (attached form or similar). Water levels are measured using the electronic probe method, as discussed below.

An electronic probe consists of a contact electrode attached to the end of an insulated electrical cable, and a reel which houses an ammeter, a buzzer, or other closed circuit indicator. The indicator shows a closed circuit and flow of current when the electrode touches the water surface. The electronic probes used shall be calibrated periodically by comparing the depth-to-water readings between the electronic probe and a steel surveyor's tape.

The procedure for measuring water levels with an electric probe is as follows:

1. Switch on and test that the battery is charged.
2. Lower the probe into the well until the ammeter or buzzer indicates a closed circuit. Raise and lower the probe slightly until the shortest length of cable that gives the maximum response on the indicator is found.
3. With the cable in this fixed position, note the depth to water from the Measuring Point (MP).
4. Repeat as necessary until at least two identical duplicate measurements are obtained.

Calibration of the electronic probe will be checked at regular intervals as part of regular maintenance measuring the position of the electrode to check that the calibration marks on the electronic probe correspond to those on the steel surveyor's tape.

3.4 Well Depth Measurements

The total depth of a well shall be measured by sounding with a weighted steel surveyor's tape or other steel or fiberglass measuring tape, weighted as needed. For shallow wells, the electronic water-level probe may also be used as a measuring device. Procedures to be followed are specified below.

- A. For calibration, measure the distance between the zero mark on the end of the measuring tape and the bottom of the weight to the nearest 0.1 foot at the beginning of each well depth measurement activity day, and whenever the apparatus is altered.
- B. To measure well depth, lower a weighted tape into the well until the tape becomes slack or there is a noticeable decrease in weight, which indicates the bottom of the well. Care should be taken to lower the tape slowly to avoid damage to the bottom of the well by the weight. Raise the

tape slowly until it just becomes taut, and with the tape in this fixed position, note the tape reading opposite the MP to the nearest 0.1 foot. Add the values from the distance from the end of the tape to the end of the weight together, round this number to nearest 0.1 foot, and record the resulting value as "Total Depth (ft, BMP)" on the Groundwater Sampling Record.

3.5 Documentation and Records Management

Water levels observed in wells selected for the groundwater level monitoring program will be tabulated on the Groundwater Sampling Record form during each monitoring period (attached form or similar). The date and time of each measurement will also be recorded on the Groundwater Sampling Record. All water level measurements shall be recorded to the nearest 0.01 foot, and all depth measurements shall be noted to the nearest 0.1 foot.

Water level data will be recorded as feet below measuring point so that water level elevations may be calculated from the depth-to-water measurement (from measuring point) and the surveyed elevation of the measuring point at each well or piezometer.

Well depth measurements may be recorded on the Groundwater Sampling Record as well.

4.0 GROUNDWATER SAMPLE COLLECTION PROCEDURES

4.1 Low Flow Sample Collection

For wells that are sampled for regulatory compliance, a low flow sample collection technique shall be employed whenever possible to ensure that representative groundwater samples are collected from each well. Additionally, low flow sampling is to be the preferred method for groundwater sampling unless site specific conditions warrant a volume-based approach or a non-purge approach such as a HydraSleeve™ (as discussed in Sections 4.2 and 4.3, respectively).

- A. Measure the depth to water (water level must be measured to nearest 0.01 feet) relative to a reference measuring point on the well casing with an electronic water level indicator or steel tape and recorded.

- B. For wells with non-dedicated equipment (i.e., no dedicated pump or no docking station), place the pump at the wellhead and slowly lower the pump and tubing down into the well until the location of the pump intake is set to the midpoint of the screened interval, unless otherwise specified in the monitoring plan. Care should be taken to minimize disturbance to the water column during insertion of the pump. A variable rate submersible centrifugal or positive displacement type pump (i.e., bladder or piston pump) will be used for purging and sampling; however, if the water table is less than 20 ft a peristaltic pump may be employed as long as the constituents measured are not influenced by negative pressures. The pump and associated tubing used shall be constructed of inert materials and compatible with the parameter(s) to be collected. The placement of the pump intake should be positioned with a calibrated sampling pump hose, sounded with a weighted-tape or using a pre-measured hose. Refer to the available well information to determine the depth and length of the screened interval. The pump should be adequately supported once it has been lower to ensure that it will not shift during purging. Record the depth of the pump intake after lowering the pump into location. For wells with dedicated pumping equipment, pump depth should be confirmed and equipment condition recorded.
- C. Measure the water level (nearest 0.01 feet) and record the information on the Groundwater Sampling Record. The water level indicator should remain in the well to allow for periodic measurement of the water level during purging.
- D. Connect the discharge line from the pump to a flow-through cell to measure water quality field parameters. A "T" connection is needed prior to the flow-through cell to allow for the collection of water for turbidity measurements. Turbidity measurements are to be collected using a separate instrument from that employed to monitor water quality in the flow through cell. The discharge line from the flow-through cell must be directed to a container to hold the purge water during the purging and sampling of the well.
- E. Start the pump at its lowest speed setting and slowly increase the speed until discharge occurs. Adjust pump speed until little or no drawdown is evident (less than 0.33 ft). If the minimal drawdown that can be achieved exceeds 0.33 feet but remains stable, continue purging until field parameters stabilize. Typically flow rates should be within 0.1 L/min to 0.5 L/min; however highly productive aquifers may allow for higher flow rates to be used. Adjustments to the flow rate to achieve stabilization should be made as quickly as possible to minimize agitation of the water column. It should be noted that this goal may be difficult to achieve under some circumstances due to geologic heterogeneities within the screened interval, and may require adjustment based on well-specific conditions and site experience.
- F. Measure the discharge rate of the pump with a flow meter or equivalent method (e.g., calibrated discharge volume measurement and stopwatch). Also, measure the water level and record both flow rate and water level on the Groundwater Sampling Record. Continue purging, monitor and record water level and pump rate every three to five minutes during purging.

- G. During purging, a minimum of one tubing volume (including the volume of water in the pump and flow-cell) must be purged prior to recording the water-quality indicator parameters. Then monitor and record the water-quality indicator parameters every three to five minutes. The water-quality indicator field parameters are turbidity, dissolved oxygen, specific conductance, pH, ORP, and temperature. The parameters are considered to have stabilized if on three successive readings of the water quality field parameters meet the following criteria:
- pH +/- 0.1 S.U.
 - Specific Conductance 3% difference
 - Temperature +/- 1°C
 - ORP +/- 10 mV
 - Turbidity 10% difference for values greater than 10 NTU
 - Dissolved Oxygen 10% difference
- H. If a stabilized drawdown in the well can't be maintained at 0.33 feet and the water level is approaching the top of the screened interval, reduce the flow rate or turn the pump off (for 15 minutes) and allow for recovery. It should be noted whether or not the pump has a check valve. A check valve is required if the pump is shut off. Begin pumping at a lower flow rate, if the water draws down to the top of the screened interval again, turn pump off and allow for recovery. If two tubing volumes (including the volumes of water in the field pump and flow-cell) have been removed during purging, then sampling can proceed next time the pump is turned on. This information should be noted in the field notebook or Groundwater Sampling Record.
- I. Prior to collecting samples from a well, a clean plastic disposable apron may be placed adjacent to or around the well to prevent equipment and sample containers from coming into contact with surface materials. Alternatively, a clean field table may be set up near the well. If used, the table will be cleaned (Section 5.1) before and after use at each well.
- J. During sampling, maintain the same pumping rate or reduce slightly for sampling in order to minimize any additional disturbance of the water column. Samples should be collected directly from the discharge port of the pump tubing prior to passing through the flow-cell. The sequence of the sampling is immaterial unless filtered (dissolved) samples are collected which must be done last. All sample containers should be filled with minimal turbulence by allowing the groundwater to flow from the tubing gently down the inside of the container. In the event that the groundwater is turbid (greater than 10 NTUs) a filtered metals sample may be collected. If a filtered metals sample is to be collected, then an in-line filter is fitted at the end of the discharge tubing and the sample is collected after the filter.

Sample bottles that do not contain preservative should be rinsed with the sample water prior to filling.

- K. Remove the pump from the well. Decontaminate the pump and tubing if non-dedicated equipment is used.

- L. Where more than one well within a specific field or site is to be sampled, the sampling sequence should begin with the well having the lowest suspected level of contamination, if known. Successive samples should be obtained from wells with increasing suspected contamination. If the relative degree of suspected contamination at each well cannot be reasonably assumed, sampling should proceed from the perimeter of the site towards the center of the site. The sampling sequence should be arranged such that wells are sampled in order of increasing proximity to the suspected source of contamination, starting from the wells upgradient of the suspected source.
- M. Sampling activity for each monitoring well will be recorded on a Groundwater Sampling Record (attached form or similar).

4.2 Volume-Based Sample Collection

In instances where low-flow sampling is not possible based on site-specific conditions (a minimum and stable drawdown cannot be maintained) samples from wells will be collected using a volume-based approach, if the yield of the well is sufficient, as follows:

- A. The depth to water in a well and the total depth will be measured using the procedures discussed in Section 3, above.
- B. A positive displacement pump, submersible pump, and/or bailer will be used for removing the groundwater in the monitoring wells (purging). Equipment used for purging and sampling may be permanently installed (dedicated) in the monitoring wells. Care must be taken that bailers and/or tubing are constructed from materials that will not affect the sample analyses. The intake of the well pump will be placed just above the screened interval in a manner consistent with that specified for the low-flow sampling above. This is to be performed such as to remove stagnant water without exposing the screened interval to atmospheric conditions and obtain the most representative sample.
- C. Wells will be pumped or bailed until at least the volume of water removed is equal to three well casing volumes (volume of standing water in the well based upon total depth of well, the depth to water, and the well casing diameter). The purge rate must not reach a point where the recharge water is entering the well in an agitated manner and the water level in the well during purging should not be allowed to drop below the pump intake. During pumping, water level measurements will be collected (as described for low-flow sampling) and the purging rate adjusted to ensure that these conditions do not occur.
- D. To ensure that the water samples are representative of the water-yielding zone, periodic measurements of the temperature, pH, dissolved oxygen, ORP, specific conductance and turbidity will be made. A flow-through cell

may be used if purging with a pump. Measurements will be recorded for the initial water removed at a minimum following each well volume purged. Note that indicator parameters dissolved oxygen and ORP cannot be accurately measured using discrete samples obtained during bailing (due to exposure to the atmosphere and entrained air becoming trapped in the sampling probe). These parameters will only be collected using a flow-through cell. The sample will be collected only when the indicator parameters have stabilized (as discussed below in Section 4.7). No more than six well volumes should be removed to prevent the effects of over pumping. If the indicator parameters have not stabilized following six well volumes the field instruments will be recalibrated and checked for possible malfunction. If no problems are found, sampling can be conducted; however, the project manager will be notified and all information will be recorded in the field notebook and/or Groundwater Sampling Record. If the yield of the well is low such that it can be bailed or pumped dry, then the recharged groundwater in the well will be considered representative regardless of the number of casing volumes of groundwater removed, since all standing water in the well has been replaced by recharge from the water-yielding zone. If a well is purged dry, the well can be sampled upon 90% recovery or after two hours, whichever occurs first.

- E. Prior to collecting samples from a well, a clean plastic disposable apron may be placed adjacent to or around the well to prevent equipment and sample containers from coming into contact with surface materials. Alternatively, a clean field table may be set up near the well. If used, the table will be cleaned (Section 5.1) before and after use at each well.
- F. Sample containers prepared specifically for the required analyses by the analytical laboratory or their supplier will be used for sample collection. Glass sample bottles should be filled to near the top. To account for slight expansion due to temperature changes, leave headspace approximately equivalent to the volume of liquid which would fill the bottle's cap. Plastic sample bottles should be filled completely. Splashing of the water in the sample container and exposure to the atmosphere shall be minimized during sampling. The container cap will be screwed on tightly immediately after filling the sample container. Under this protocol, samples should be collected in order of decreasing volatility (i.e., most volatile samples will be collected first). Sample filtration, if necessary, is discussed in Section 4.3 of this SOP.

Sample bottles that do not contain preservative should be rinsed with the sample water prior to filling.

- G. Where more than one well within a specific field or site is to be sampled, the sampling sequence should begin with the well having the lowest suspected level of contamination, if known. Successive samples should be obtained from wells with increasing suspected contamination. If the relative degree of suspected contamination at each well cannot be reasonably assumed, sampling should proceed from the perimeter of the site towards the center of the site. The sampling sequence should be arranged such that wells are sampled in order of increasing proximity to the suspected source of contamination, starting from the wells upgradient of the suspected source.

- H. Sampling activity for each monitoring well will be recorded on a Groundwater Sampling Record (attached form or similar).

4.3 Non-Purge Sample Collection Using a HydraSleeve

In monitoring wells with very low yield and where low-flow sampling or volume-based purging is not practical, a non-purge method, sampling using a HydraSleeve™, may be used to collect groundwater samples by the following procedure:

- A. The depth to water in a well and the total well depth will be measured using the procedures discussed in Section 3, above. This measurement can be used to determine the preferred position of the HydraSleeve within the well screen.
- B. Determine the necessary length of HydraSleeves needed for the specific well screen length and/or water column height to recover the necessary sample volume. HydraSleeves are manufactured in standard lengths of 30, 36, and 60 inches. However, up to three 30-inch HydraSleeves may be installed in series on a single tether (using plastic cable ties) to achieve more volume. Alternatively, a TurboSleeve may be used, which is an 8-foot long HydraSleeve that allows recovery of 8 liters of sample volume. Per manufacturer's recommendations, the TurboSleeve should be allowed to equilibrate in the well for 24 hours before retrieval to allow for full compression of the sleeve for full sample recovery (see step G below).
- C. Measure the correct amount of tether cord needed to suspend the HydraSleeve in the well so the weight will not rest on the bottom of the well and the desired depth is achieved.
- D. Remove the HydraSleeve from its packaging, unfold and hold it by its top. Crimp the top of the HydraSleeve by folding the hard polyethylene reinforcing strips at the holes.
- E. Attach the spring clip to the holes to ensure the top of the HydraSleeve will remain open until the sampler is retrieved. Attach the tether to the spring clip with a strong knot (or tether can be attached to one of the holes at the top of the HydraSleeve).
- F. Fold the flaps with the two holes at the bottom of the HydraSleeve together and slide the weight clip through the holes. Attach the weight to the bottom of the weight clip to ensure the HydraSleeve will descend to the desired depth.
- G. To deploy the HydraSleeve, carefully lower the HydraSleeve on its tether to the desired depth in the water column. Hydrostatic pressure will keep the self-sealing check valve at the top of the HydraSleeve closed and ensure that it remains flat and empty and will only fill with groundwater from the desired interval when it is retrieved.

- H. To retrieve the HydraSleeve to collect groundwater samples, pull up the tether 30 to 45 inches (36 to 54 inches for longer HydraSleeves) in one smooth motion at a rate of about one inch per second or faster. This motion will open the top check valve and allow the HydraSleeve to fill. When the HydraSleeve is full, the top check valve will close and the full weight of the HydraSleeve can be felt by the sampler. Continue to pull the HydraSleeve upward to the top of the well to retrieve. Two persons are needed to retrieve a TurboSleeve, if used, due to its length and flexibility.
- I. Once recovered, decant and discard the small volume of water trapped in the HydraSleeve above the top check valve.
- J. To fill sample bottles, remove the discharge tube from its sleeve. While holding the HydraSleeve at the check valve, puncture the HydraSleeve just below the check valve with the pointed end of the discharge tube. Discharge the water into the sample bottles as needed.
- K. Any leftover water from the HydraSleeve can be poured into a separate vessel for the measurement of groundwater field parameters as needed.
- L. Dispose each used HydraSleeve after use at an individual well.

4.4 Non-Purge Sample Collection by Bailer

In monitoring wells with very low yield where low-flow sampling or volume-based purging is not practical and sampling with HydraSleeves™ is not feasible, sampling by bailer without purging the well may be used to collect groundwater samples by the following procedure:

- A. The depth to water in a well and the total depth will be measured using the procedures discussed in Section 3, above. This measurement can be used to determine the height of water and the volume of groundwater within the well screen.
- B. A clean, sufficiently weighted PVC or polyethylene bailer will be used attached to a pre-measured length of either coated stainless steel cable or nylon rope tether for each well to be sampled by bailing.
- C. The bailer will be slowly lowered through the water column to the well screen interval on the pre-measured tether. Slow and consistent movement of the bailer downward through the well allows the water within the well to pass through the bailer.
- D. When the desired depth within the well screen interval is reached, the downward movement of the bailer will immediately be reversed and the bailer slowly retrieved to the surface. This action allows the bailer to collect water representative of conditions within the well screen interval while minimizing generation of turbid conditions within the well.

- E. Steel cable or rope will not be allowed to touch the ground surface during retrieval. A reel, tub, tarp, or plastic sheeting can be used to prevent contact with the ground.
- F. Upon retrieval of the bailer, sample bottles for metals analysis will be filled first, followed by the remaining sample bottles. If more sample volume is needed, the bailer will again be slowly lowered to the screen interval and retrieved as necessary until required sample bottles have been filled.
- G. If a filtered metals sample is to be collected, the necessary volume can be filtered from one clean, non-preserved sample bottle as needed.
- H. Field parameters will be measured in the instrument cup or other rinsed container following collection of sample bottles. A small aliquot of sample volume will be poured from the bailer for the collection of field parameters.
- I. If the well bails dry but additional sample volume is required, the volume will be removed from the well via bailer if such recharge occurs in the well within 24 hours.

4.5 Sample Filtration

When required, a field-filtered water sample will be collected using a disposable, in-line 0.45 μm filter. The water sample will be pumped through the filter attached directly to the discharge tubing. A peristaltic pump and a clean section of Tygon (polyvinylchloride) tubing, silicone tubing, or other appropriate method may be used if the sample is collected via bailer. The filter cartridge will be rinsed with an aliquot of 500 ml of sample prior to collection of sample in to the containers or as per the filter manufacturer's recommendations. Both the filter and tubing will be disposed of between samples.

4.6 Sample Containers and Volumes

The sample containers will be appropriate to the analytical method and will be obtained from the water analysis laboratory or other approved source. Different containers will be required for specific groups of analytes in accordance with U.S. EPA Methods, project-specific requirements, and/or other local jurisdictional guidance. The sampler will confirm with the laboratory performing the analyses that appropriate bottleware and preservatives are used and ensure that a sufficient volume of sample is collected.

4.7 Sample Labeling

Sample containers will be labeled with self-adhesive tags. Each sample will be labeled with the following information using waterproof ink.

- A. Project identification;
- B. Sample identification;
- C. Date and time samples were obtained;
- D. Requested analyses and method;
- E. Treatment (preservative added, filtered, etc.); and
- F. Initials of sample collector(s).

4.8 Sample Preservation and Storage

If required by the project or analytical method, water samples submitted for chemical analysis will be stored at 4 °C in ice-cooled, insulated containers immediately after collection. Preservation and storage methods depend on the chemical constituents to be analyzed and should be discussed with the laboratory prior to sample collection. EPA and/or other local jurisdictional requirements and/or the requirements of a project-specific plan (e.g., sampling and analysis plan, work plan, quality assurance project plan, etc.) shall be adhered to in preservation and storage of water samples.

4.9 Sample Custody

Samples shall be handled and transported according to the sample custody procedures discussed in the JRS SOP entitled SAMPLE CUSTODY, PACKAGING, AND SHIPMENT (JRS SOP No. 2). The sample collector shall document each sample on the Chain-of-Custody and Request for Analysis form.

4.10 Field Measurements

Specific conductance, pH, dissolved oxygen, ORP, temperature, and turbidity measurements will be performed on water samples at the time of sample collection. The only exceptions will be for DO and ORP when the samples are collected via bailer or in those instances where a flow-through cell cannot be used. Data obtained from these (or other) field water quality measurements will be recorded on the appropriate sampling

records. Separate aliquots of water shall be used to make field measurements (i.e., sample containers for laboratory analysis shall not be reopened).

For groundwater samples, field measurement intervals will be as presented above. If the parameters have not stabilized, check to insure that the field instruments are operating correctly and remain calibrated. Recalibrate the instruments if needed, if an instrument cannot be calibrated it will be labeled needing repair and removed from service. Field measurements and purging will continue until three consecutive readings have stabilized to within the following limits or until a maximum of six casing volumes have been removed:

- pH \pm 0.1 S.U.
- Specific Conductance 3% difference
- Temperature \pm 1°C
- ORP \pm 10 mV
- Turbidity 10% difference for values greater than 10 NTU
- Dissolved Oxygen 10% difference

4.10.1 Temperature Measurement

Temperature will be measured directly from the water source or from a separate sample aliquot. Temperature measurements will be made with a mercury-filled thermometer, bimetallic-element thermometer, or electronic thermistor. All measurements will be recorded in degrees Celsius (°C). When a flow-through cell is used the temperature can be measured directly via a multi-parameter instrument as per the manufacturer's instructions.

4.10.2 pH Measurement

A pH measurement will be made by dipping the probe directly into the water source or into a separate sample aliquot. Prior to measurement, the container in which the field parameter sample will be collected will be acclimated to the approximate temperature of the sample. This can be accomplished by immersing the container in water removed from a well during the purging process. The pH measurement will be made as soon as possible after collection of the field parameter sample, preferably within a few minutes, using a pH electrode. The value displayed on the calibrated instrument will be recorded after the reading has stabilized. If the value falls outside of the calibrated range, then

the pH meter will be recalibrated using the appropriate buffer solutions. When a flow-through cell is used the pH can be measured directly via a multi-parameter instrument as per the manufacturer's instructions.

4.10.3 Dissolved Oxygen

Dissolved oxygen (DO) will be measured by using a suitable multi-parameter meter that can be placed into a flow-through cell and sealed such that exposure to the atmosphere is prevented. The instrument will be calibrated at least daily prior to initiating field activities and periodically throughout the day or as recommended by the instrument manufacturer. DO measurements will be reported in milligrams per liter (mg/L).

For further detail, see MFG SOP No. 17, Field Measurement of Dissolved Oxygen.

4.10.4 Oxidation Reduction Potential

Oxidation Reduction Potential (ORP) will be measured by using a suitable multi-parameter meter that can be placed into a flow-through cell and sealed such that exposure to the atmosphere is prevented. The instrument will be calibrated at least daily prior to initiating field activities and periodically throughout the day or as recommended by the instrument manufacturer. ORP measurements will be reported in mV.

For further detail, see MFG SOP No. 13, Field Measurement of Oxidation-Reduction Potential.

4.10.5 Specific Conductance Measurement

Specific conductance will be measured by dipping the probe directly into the water source or into a separate sample aliquot. The probe must be immersed to the manufacturer's recommended depth. Specific conductance will be reported in micromhos/cm or microsiemens/cm at 25 °C. If the meter is not equipped with an automatic temperature compensation function, then the field value will be adjusted at a later time using the temperature data and the following formula:

$$SC_{25} = SC_T / [1 + \{(T - 25) \times 0.025\}]$$

where: SC_{25} = specific conductance at 25 °C
 SC_T = specific conductance measured at temperature T (°C)
T = sample temperature (°C)

The value displayed on the calibrated instrument will be recorded after the reading has stabilized. If the value falls outside of the calibrated "range" set by the range dial on the instrument, then the range setting will be changed to a position that gives maximum definition. If the specific conductance value falls outside of the calibrated range of the conductivity standard solution, then the instrument will be recalibrated using the appropriate standard prior to measurement. When a flow-through cell is used the specific conductance can be measured directly via a multi-parameter instrument as per the manufacturer's instructions.

4.10.6 Turbidity

Turbidity will be measured by using a field portable nephelometer separate from the multi-parameter meter used for DO and ORP and capable of reading down to 0.1 NTU. Turbidity will be measured directly from the water source or from a separate sample aliquot. The instrument will be calibrated at least daily prior to initiating field activities and periodically throughout the day or as recommended by the instrument manufacturer. Turbidity measurements will be reported in nephelometric turbidity units (NTU).

4.10.7 Equipment Calibration

Equipment used to measure field parameters will be calibrated in the field by field personnel according to manufacturer's instructions prior to any measurements being taken. Calibration checks will be performed periodically throughout the day of instruments use in the field and the results will be documented on the Groundwater Sampling Record for each sampling station.

4.11 DOCUMENTATION

4.11.1 Groundwater Sampling Record

Each sampling event for each monitoring well will be recorded on a Groundwater Sampling Record form (attached form or similar). The documentation should include the following:

- A. Project identification;
- B. Location identification;
- C. Sample identification(s) (including quality control samples);
- D. Date and time of sampling;
- E. Purging and sampling methods;
- F. Sampling depth;
- G. Name(s) of sample collector(s);
- H. Inventory of sample bottles collected including sample preservation (if any), number, and types of sample bottles;
- I. Total volume of water purged;
- J. Results of field measurements and observations (time and cumulative purge volume, temperature, pH, specific conductance, turbidity, sediment, color, purge rate);
- K. Equipment cleaning record;
- L. Description and identification of field instruments and equipment; and
- M. Equipment calibration record.

When the sampling activity is completed, the Groundwater Sampling Record will be checked by the Project Manager or his/her designee, and the original record will be placed in the project file.

5.0 QUALITY CONTROL

5.1 Equipment Decontamination/Cleaning

Steel surveyor's tapes, electric well probes, and other measuring tapes shall be cleaned prior to use and after measurements in each well are completed. Cleaning shall be accomplished by either (1) washing with a laboratory-grade detergent/water solution, rinsing with clean, potable, municipal water, final rinsing with distilled or deionized water, or (2) steam cleaning followed by rinsing with distilled or deionized water. After cleaning,

equipment will be packaged and sealed in plastic bags or other appropriate containers to minimize contact with dust or other contaminants.

Sample bottles and bottle caps will be pre-cleaned and prepared by the analytical laboratory or their supplier using standard EPA-approved protocols. Sample bottles and bottle caps will be protected from dust or other contamination between time of receipt by the sampler(s) and time of actual usage at the sampling site.

Groundwater sampling equipment may be dedicated to a particular well at a project site. Prior to installation of this equipment, all equipment surfaces that will be placed in the well or may come in contact with groundwater will be cleaned to prevent the introduction of contaminants.

Sampling equipment that will be used at multiple wells or sampling locations will be cleaned after sampling at each location is completed in accordance with the SOP entitled EQUIPMENT DECONTAMINATION (JRS SOP No. 7).

Equipment such as submersible electric pumps, which cannot be disassembled for cleaning, will be cleaned by circulating a laboratory-grade, detergent and potable water solution through the assembly, followed by clean potable water from a municipal supply, and then by distilled or deionized water. Equipment cleaning methods will be recorded on the Groundwater Sampling Record.

5.2 Technical and Records Reviews

The project manager or designated reviewer will check and verify that documentation has been completed and filed per this procedure.

In addition, all calculations of water-level elevations must be reviewed before they are submitted to the project file and used to describe site conditions. The calculation review should be performed by technical personnel familiar with this procedure. Evidence of the completed review and any necessary corrections to calculations should also be submitted to the project file.

6.0 REFERENCES

- U.S. EPA, Region 9. *Standard Operating Procedure for the Standard/Well-Volume Method for Collecting a Ground-Water Sample from Monitoring Wells for Site Characterization*. Available online at:
earth1.epa.gov/region09/qa/pdfs/finalgwsamp_sop.pdf.
- U.S. EPA, Region 1, 1996. *Low Stress (low flow) Purging and Sampling Procedure for the Collection of Ground Water Samples from Monitoring Wells*. July 30, 1996.
- U.S. EPA, 2002, *Ground-Water Sampling Guidelines for Superfund and RCRA Project Managers*. EPA 542-S-02-001. May 2002.
- U.S. Geological Survey, variously dated. National field manual for the collection of water-quality data: U.S. Geological Survey Techniques of Water-Resources Investigations, Book 9, Chapters A1-A9, available online at
<http://pubs.water.usgs.gov/twri9A>.

J.R. SIMPLOT COMPANY - SMOKY CANYON MINE

LOCATION ID:

Casing Volume (gal): _____ 2X: _____ 3X: _____ Water Level End of Purge (ft, BMP): _____

Decontamination: Alconox, Distilled Water, Rinse

Method of Sampling: Collect Sample in Disposable (one-time use) container

After Calibration Meter Read: _____

Turbidity Kit: Model: HF Scientific MicroTPW Turbidity Meter Calibration:

[illegible][illegible]

SAMPLE ID: _____

Sample Processing		Container Type	Volume (mL)	Number of Bottles	Filtered	Preseervative	Comments
Date	Time						

SIGNATURE: _____

SMOKY CANYON MINE



J.R. SIMPLOT COMPANY 1130 W. HIGHWAY 30 POCA TELLO, IDAHO 83204
P.O. BOX 912 POCA TELLO, IDAHO 83204
(208) 235-5602 FAX (208) 235-5699

CORPORATE – POCA TELLO OFFICE

November 4, 2015

Mary Kauffman
USDA Forest Service – Caribou National Forest
410 East Hooper Street
Soda Springs, Idaho 83276

US EPA
NOV 06 2015
IDAHO OPERATIONS OFFICE

**Subject: Smoky Canyon Mine Remedial Investigation/Feasibility Study (RI/FS)
Final Addendum 07 – Sampling and Analysis Plan (SAP)
Additional Wells Formation Aquifer Investigation in the Panel A Area (GW-30)**

Title Page and Attachment 3 (Drill Plan 2015 Migratory Bird Clearance Survey Results)

Dear Mary:

Please find enclosed the Title Page and Attachment 3 (Drill Plan 2015 Migratory Bird Clearance Survey Results) for Final Addendum 07 to the Final Sampling and Analysis Plan (SAP) for the Smoky Canyon Mine RI/FS submitted as Draft on July 20, 2015, and approved as Final on July 22, 2015 pending transmittal of these two items. This submittal covers plans that were implemented for installation of new monitoring well GW-30. A CD containing the enclosed materials, along with the Final RI/FS SAP and other addenda, is also included in this submittal.

The J.R. Simplot Company (Simplot) is providing this submittal, in accordance with the August 2009 Settlement Agreement/Consent Order, to address a Wells Formation groundwater data need identified in the northern area of the mine.

The electronic files are available for download at:

<https://smokyrifs.formationclient.com/>

Username: (b) (6)

Password (case sensitive): (b) (6)

Please contact me if you have any questions.

Sincerely,

Monty Johnson
Environmental Engineering Manager

Enclosures

cc: see attached distribution list

SMOKY CANYON MINE – DISTRIBUTION LIST

REMEDIAL INVESTIGATION/FEASIBILITY STUDY

Subject: Final Sampling and Analysis Plan (SAP) Addendum 07—Title Page and Attachment 3

Date: November 4, 2015

<u>X</u>	Mary Kauffman (1 unbound hard copy) USDA Forest Service Caribou/Targhee National Forest Soda Springs District Office Attn: Smoky Canyon Site Record 410 E. Hooper St. Soda Springs, ID 83276	<u>X</u>	Mary Kauffman (1 hard copy) USDA Forest Service Caribou/Targhee National Forest 1405 Hollipark Drive Idaho Falls, ID 83401
<u>X</u>	James Alexander (1 CD only) USDA Office of the General Counsel 1220 SW Third Avenue Floor G, Room G002 (mail room) Portland, OR 97204	<u>X</u>	Alan Prouty, Burl Ackerman (2 hard copies) J.R. Simplot Company P.O. Box 27, One Capital Center 999 Main Street, Ste 1400 (mail room) Boise, ID 83707-0027
<u>X</u>	Wayne Crowther (1 hard copy) Idaho Dept. of Environmental Quality 444 Hospital Way, Suite 300 Pocatello, ID 83201	<u>X</u>	Monty Johnson (3 hard copies) Dennis Facer, Lori Hamann J.R. Simplot Company P.O. Box 912 1130 West Highway 30 Pocatello, ID 83204
<u>X</u>	Colleen O'Hara-Epperly (1 hard copy) Bureau of Land Management Pocatello Field Office 4350 South Cliffs Drive Pocatello, ID 83204	<u>X</u>	Chad Gentry (email only) Rachel Roskelley, Grant Williams, Dustin Hansen (3 hard copies) J.R. Simplot Company, Smoky Canyon Mine 1890 Smoky Canyon Mine Road Afton, WY 83110
<u>X</u>	Sandi Fisher (1 hard copy) US Fish and Wildlife Service 4425 Burley Drive, Suite A Chubbuck, ID 83202	<u>X</u>	Gary Billman (1 hard copy) Idaho Department of Lands 3563 Ririe Highway Idaho Falls, ID 83401
<u>X</u>	Matt Wilkening (1 hard copy) EPA, Idaho Operations Office 950 W. Bannock St., Suite 900 Boise, ID 83702	<u>X</u>	Kelly Wright (1 hard copy) Env. Waste Mgmt. Program Shoshone-Bannock Tribes P.O. Box 306 Fort Hall, ID 83203
<u>X</u>	Ted Yackulic (1 CD only) EPA Region 10 Office of Regional Counsel (ORC-158) 1200 Sixth Avenue Seattle, WA 98101	<u>X</u>	Susan Hanson (1 hard copy) (b) (6)
<u>X</u>	Brady Johnson (1 hard copy) Idaho Dept. of Environmental Quality 1410 North Hilton Boise, ID 83706	<u>X</u>	Doug Scott (1 CD only) CH2M Hill 59 Lilac Court Pagosa Springs, CO 81147
<u>X</u>	Rick McCormick (2 hard copies) Allan Erickson CH2M Hill 322 East Front Street Suite 200 Boise, ID 83702	<u>X</u>	Fred Charles (3 hard copies) Buz Cotton, Len Mason Formation Environmental, LLC 2500 55 th Street Suite 200 Boulder, CO 80301

NOTE: Each hard copy report includes 1 complete CD

FINAL

Addendum 07

**Smoky Canyon Mine
Remedial Investigation/Feasibility Study
Sampling and Analysis Plan**

J.R. Simplot Company

July 2015 (Addendum 07)

Additional Wells Formation Aquifer Investigation in the Panel A Area

Prepared for:

J.R. Simplot Company
Smoky Canyon Mine
1890 Smoky Canyon Mine Road
Afton, WY 83110

P.O. Box 27, One Capital Center
999 Main Street, Suite 1300
Boise, ID 83707-0027

Prepared by:



Formation Environmental, LLC
2500 55th Street, Suite 200
Boulder, Colorado 80301

ATTACHMENT 3

Drill Plan 2015 Migratory Bird Clearance Survey Results

J.R. Simplot Company, Smoky Canyon Mine, Idaho

(Report prepared by Stantec Consulting Services, Inc., July 21, 2015)



To: Katie Wilkes, Geologist and Rachel Roskelley, Environmental Coordinator, Smoky Canyon Mine, J.R. Simplot Company

From: Greg Brown and Greg Sharp, Biologists – Stantec Consulting Services Inc.

Smoky Canyon Mine, Idaho

File: Drill Plan 2015 Migratory Bird Clearance Survey Results

Date: July 21, 2015

Reference: Drill Plan 2015 Project for East Smoky

METHODS

Surveys to locate active migratory bird nests were conducted on July 14 - 16, 2015 by a Stantec biologist for the proposed East Smoky 2015 Drilling Plan activities. Proposed 2015 drilling activities include: drilling 11 Oriented Core Holes, 6 Salt Formation Auger Holes, and 1 Groundwater Monitoring Well (see attached Figure). These surveys were conducted in advance of vegetation clearing for access road and drill pad construction. The proposed access roads and sites were flagged in the field and locations were downloaded onto a GPS for use in the field during the surveys.

An intensive nest search was conducted within the areas proposed to be disturbed and a 100-foot buffer area at 18 sites and associated access roads. Areas around any discovered active nests were flagged in the field with yellow tape.

No additional buffer of the disturbance areas were applied to account for active raptor/owl nests as stantec biologists had recently (week of June 1 -5, 2015) conducted a 2nd year of northern goshawk surveys for the East Smoky Panel EIS and had not discovered or observed any active raptor/owl nests within the 2015 Drill Plan area.

RESULTS

Seven active migratory bird nest sites were located in the proposed disturbance area and are listed in **Table 1** and shown on the attached Figure. An area around each nest site was flagged in the field (see attached photos), although in some cases the actual nest was not observed as not to disturb the nest, but the area around the tree/shrub that the nest was obviously in was flagged. Adult birds were observed feeding chicks at many of the nest sites and/or adults were observed defending a shrub or tree that had a nest in it. Many young fledglings, of different species, were observed being fed by adults during the survey. A northern goshawk was observed perched near the existing main access, towards the northern end. Birds observed incidentally during the migratory bird nest survey are listed in **Table 2**. Observations and results of the survey are listed below.

July 21, 2015

Katie Wilkes, Geologist and Rachel Roskelley, Environmental Coordinator, Smoky Canyon Mine, J.R. Simplot Company

Page 2 of 9

Reference: Drill Plan 2015 for East Smoky

Table 1. Summary of active migratory bird nests observed.

Site ID	Species	UTM X	UTM Y	Date
ES_29	Dark-eyed Junco	491000	4727923	7/14/15
CNI_2015_DH7	Dark-eyed Junco	491070	4727189	7/14/15
CNI_2015_DH2	Black-capped chickadee	490948	4725839	7/15/15
CNI_2015_DH4	Western wood-pewee	491059	4726296	7/15/15
CNI_2015_DH4	American Robin	491018	4726281	7/15/15
GW_30	Black-capped chickadee	490917	4726676	7/16/15
CNI_2015_DH6	Tree swallow	491092	4726717	7/16/15

Survey Results (*=nest at site. The stakes in the field were labeled with CH)

CNI_2015_DH11B – On existing reclaimed access from 2014. No nests were found. Bird species heard or seen include: hermit thrush, northern flicker, dark-eyed junco, black-capped chickadee, black-throated gray warbler, warbling vireo and chipping sparrow.

CNI_2015_DH10 – On existing reclaimed access from 2014. No nests were found. Bird species heard or seen include: hermit thrush, northern flicker, dark-eyed junco, black-capped chickadee, black-throated gray warbler, warbling vireo and chipping sparrow.

ES14_15W – Access and site are in 2014 reclaimed access areas. No nests were found. Bird species heard or seen include: chipping sparrow, pine siskin, dark-eyed junco, red-breasted nuthatch, mourning dove, American robin, mountain chickadee, warbling vireo, and a Cooper's hawk flew over.

CNI_2015_DH9 – On the edge of the existing road. No nests were found. Birds species heard or seen include: chipping sparrow and American robin.

***ES_29** – This site is located next to the existing road. A pair of dark-eyed juncos were observed defending an area in a chokecherry bush, thus a nest was assumed. The area was flagged. It is 50 feet south of the stake. A hairy woodpecker was seen feeding fledglings in the area, but not in a nest, and a hermit thrush was heard.

CNI_2015_DH8 - A short new access to DHH8 was surveyed. No nests were found. Bird species heard or seen include: hairy woodpecker, warbling vireo, hermit thrush, and dark-eyed junco.

*** CNI_2015_DH7 and ES_21** – These sites were in reclaimed access from 2014. A dark-eyed junco was guarding an area around a shrub, thus the area was flagged and a nest was assumed. The assumed nest is along the edge of the existing reclaimed access. Other birds seen or heard include: warbling vireo, American robin, black-capped chickadee.

July 21, 2015

Katie Wilkes, Geologist and Rachel Roskelley, Environmental Coordinator, Smoky Canyon Mine, J.R. Simplot Company

Page 3 of 9

Reference: Drill Plan 2015 for East Smoky

CNI_2015_DH1 – On existing reclaimed access from 2014. No nests were found. Bird species heard or seen include: warbling vireo, American robin, black-capped chickadee, western tanager, and green-tailed towhee.

*** CNI_2015_DH2 and ES_62** – On existing reclaimed access from 2014. A black-capped chickadee was nesting in a dead aspen 30 feet north. The area was flagged. Bird species heard or seen include: hermit thrush, northern flicker, dark-eyed junco, black-capped chickadee, warbling vireo, and mountain chickadee.

*** CNI_2015_DH4** – On existing reclaimed access from 2014 and new access. A western wood-pewee was nesting in an aspen tree along the reclaimed access. The area was flagged. An American robin was nesting in an aspen tree 20 south of the access, the area was flagged. Other bird species heard or seen include: hermit thrush, northern flicker, dark-eyed junco, black-capped chickadee, and warbling vireo.

***GW_30 and ES14_30E** – On existing reclaimed access from 2014 and a long new access area to GW30. A black-capped chickadee nest was found in a dead aspen. The nest is located in the switch back area of the new access road. The area was flagged. Bird species heard or seen include: hermit thrush, northern flicker, American robin, dark-eyed junco, black-capped chickadee, hairy woodpecker, warbling vireo, red-naped sapsucker, and ruffed grouse.

*** CNI_2015_DH6** – On existing road. A tree swallow nest was located in a dead aspen tree at the stake. Area was flagged.

CNI_2015_DH3 – This is located on existing road. Drilling is going on nearby. No nests were found. Birds in the area include: northern flicker, American robin, and dark-eyed junco.

CNI_2015_DH5 – Located along existing road. No nests were found. Birds in the area include: northern flicker, American robin, and dark-eyed junco.

ES14_36E – Access and site are on 2014 reclaimed access. No nests were found. Bird species heard or seen include: hermit thrush, northern flicker, American robin, dark-eyed junco, black-capped chickadee, hairy woodpecker, and warbling vireo.

Table 2. Summary of incidental migratory bird observations.

Common name	Scientific name
American robin	<i>Turdus migratorius</i>
Black-capped chickadee	<i>Poecile atricapillus</i>
Black-throated gray warbler	<i>Setophaga nigrescens</i>
Chipping sparrow	<i>Spizella passerina</i>

July 21, 2015

Katie Wilkes, Geologist and Rachel Roskelley, Environmental Coordinator, Smoky Canyon Mine, J.R. Simplot Company

Page 4 of 9

Reference: Drill Plan 2015 for East Smoky

Common name	Scientific name
Cooper's hawk	<i>Accipiter cooperii</i>
Dark-eyed junco	<i>Junco hyemalis</i>
Green-tailed towhee	<i>Pipilo chlorurus</i>
Hermit thrush	<i>Catharus guttatus</i>
House wren	<i>Troglodytes aedon</i>
Mountain chickadee	<i>Poecile gambeli</i>
Mourning dove	<i>Zenaida macroura</i>
Northern flicker	<i>Colaptes auratus</i>
Northern Goshawk	<i>Accipiter gentilis</i>
Pine siskin	<i>Carduelis pinus</i>
Red-breasted nuthatch	<i>Sitta canadensis</i>
Red-naped sapsucker	<i>Sphyrapicus nuchalis</i>
Ruffed grouse	<i>Bonasa umbellus</i>
Tree swallow	<i>Tachycineta bicolor</i>
Turkey vulture	<i>Cathartes aura</i>
Western tanager	<i>Piranga ludoviciana</i>
Yellow-rumped warbler	<i>Dendroica coronata</i>

July 21, 2015

Katie Wilkes, Geologist and Rachel Roskelley, Environmental Coordinator, Smoky Canyon Mine, J.R. Simplot Company

Page 5 of 9

Reference: Drill Plan 2015 for East Smoky



Junco nest area near ES_29



Junco nest area along access to CNI_2015_DH7

July 21, 2015

Katie Wilkes, Geologist and Rachel Roskelley, Environmental Coordinator, Smoky Canyon Mine, J.R. Simplot Company

Page 6 of 9

Reference: Drill Plan 2015 for East Smoky



Black-capped chickadee nest area at CNI_2015_DH2



Western wood-pewee nest along edge of access to CNI_2015_DH4

July 21, 2015

Katie Wilkes, Geologist and Rachel Roskelley, Environmental Coordinator, Smoky Canyon Mine, J.R. Simplot Company

Page 7 of 9

Reference: Drill Plan 2015 for East Smoky



American robin nest area 20 feet south of the access to CNI_2015_DH4

July 21, 2015

Katie Wilkes, Geologist and Rachel Roskelley, Environmental Coordinator, Smoky Canyon Mine, J.R. Simplot Company

Page 8 of 9

Reference: Drill Plan 2015 for East Smoky



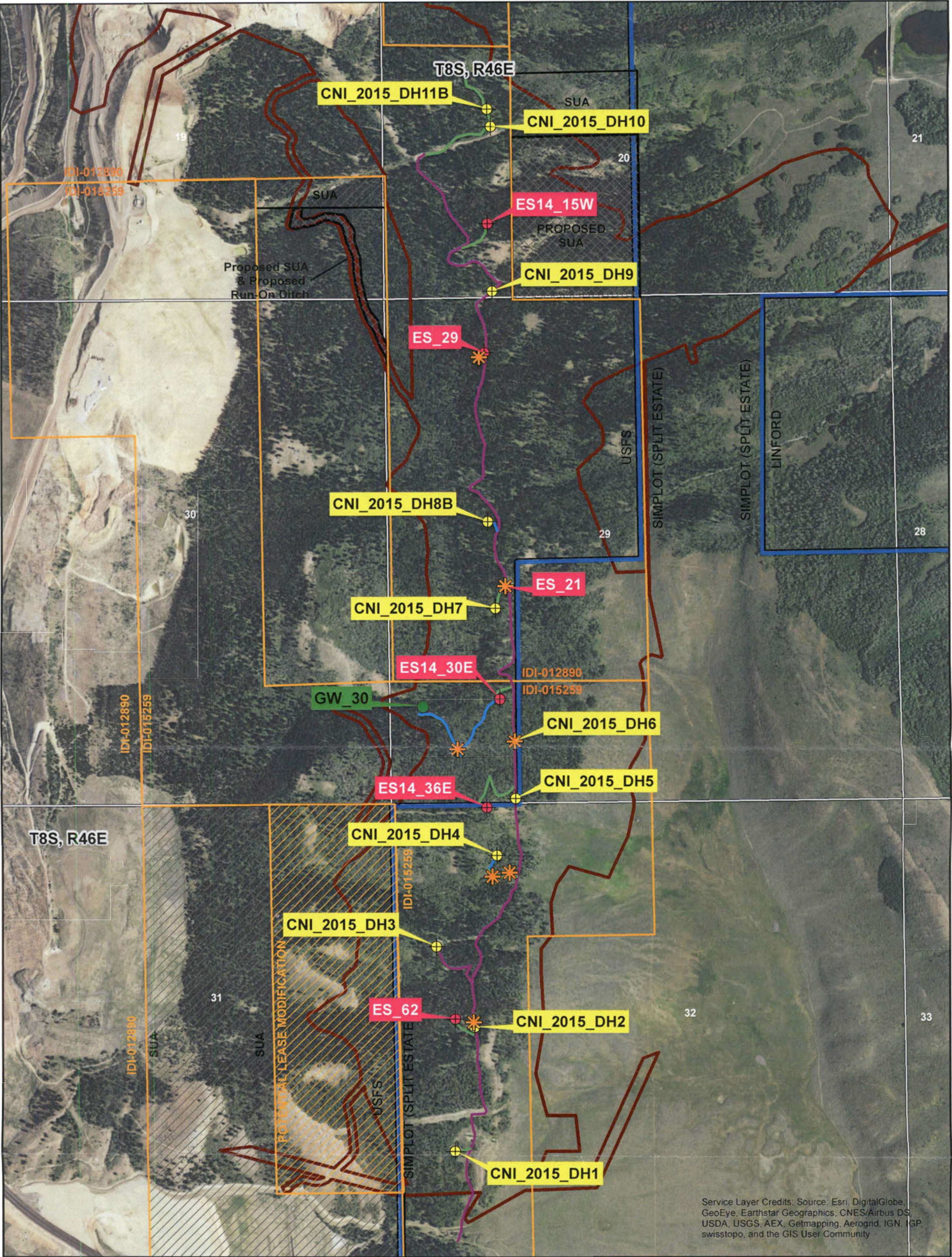
Black-capped chickadee nest area along new access to GW_30



Tree swallow nest area at CNI_2015_DH6

Figure

**Survey Area and
Active Nest Locations**



Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

Project Location: SE Idaho, T8S, R46E, Sec. 19-21 & 29-32

- Nest Location

GW 30 DrillPad

Proposed Drill Holes

Proposed Angle-Oriented Core Drilling Sites

Proposed Salt Lake Formation Auger Drilling Sites
- Drill Hole Access Roads**

Existing Road

Redisturbance to Reclaimed Road

New Road

Surface Ownership Boundary

Proposed East Smoky Panel Disturbance Boundary
- Leases**

BLM Lease

Potential BLM Lease Modification

Special Use Authorization (SUA)

Proposed Special Use Authorization

1,000 0 1,000 Feet

**Proposed Drill Holes and Access Roads
East Smoky Panel Mine EIS**



J.R. SIMPLOT COMPANY 1130 W. HIGHWAY 30 POCATELLO, IDAHO 83204
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CORPORATE – POCATELLO OFFICE

US EPA

OCT 16 2014

IDAHO OPERATIONS OFFICE

October 14, 2014

Mary Kauffman
USDA Forest Service – Caribou National Forest
410 East Hooper Street
Soda Springs, Idaho 83276

**Subject: Smoky Canyon Mine Remedial Investigation/Feasibility Study (RI/FS)
Addendum 05 – Final Sampling and Analysis Plan (SAP)
Additional Wells Formation Aquifer Investigation in the Panel A Area**

Dear Mary:

Please find enclosed one unbound hardcopy of the Final Addendum 05 to the Final Sampling and Analysis Plan (SAP) for the Smoky Canyon Mine RI/FS. The J.R. Simplot Company (Simplot) is submitting this document, in accordance with the August 2009 Settlement Agreement/Consent Order, to address a Wells Formation groundwater data need recently identified in the northern area of the mine.

This addendum presents plans for well installation, sampling, and analysis for an additional Wells Formation monitoring well in the Panel A area. The methods referenced in this addendum are consistent with previously approved protocols presented in the Final RI/FS SAP (June 2010). Final SAP Addendum 05 incorporates revisions in response to Agency comments (dated July 7, 2014) on the draft submittal (dated June 19, 2014), along with subsequent communication with the Agencies. Simplot responses to Agency comments are also provided.

The electronic files are available for download at:

<https://smokyrifs.formationclient.com/>

Username: (b) (6)

Password (case sensitive): (b) (6)

Please contact me if you have any questions.

Sincerely,

Monty Johnson
Environmental Engineering Manager

Enclosures

cc: see attached distribution list

SMOKY CANYON MINE – DISTRIBUTION LIST

REMEDIAL INVESTIGATION/FEASIBILITY STUDY

Subject: Final Sampling and Analysis Plan (SAP) Addendum 05

Date: October 14, 2014

<u>X</u>	Mary Kauffman (1 unbound hard copy) USDA Forest Service Caribou/Targhee National Forest Soda Springs District Office Attn: Smoky Canyon Site Record 410 E. Hooper St. Soda Springs, ID 83276	<u>X</u>	Mary Kauffman (1 hard copy) USDA Forest Service Caribou/Targhee National Forest 1405 Hollipark Drive Idaho Falls, ID 83401
<u>X</u>	James Alexander (1 CD only) USDA Office of the General Counsel 1220 SW Third Avenue Floor G, Room G002 (mail room) Portland, OR 97204	<u>X</u>	Alan Prouty (2 hard copies) Burl Ackerman J.R. Simplot Company P.O. Box 27, One Capital Center 999 Main Street, Ste 1400 (mail room) Boise, ID 83707-0027
<u>X</u>	Wayne Crowther (1 hard copy) Idaho Dept. of Environmental Quality 444 Hospital Way, Suite 300 Pocatello, ID 83201	<u>X</u>	Monty Johnson (3 hard copies) Dennis Facer, Lori Hamann J.R. Simplot Company P.O. Box 912 1130 West Highway 30 Pocatello, ID 83204
<u>X</u>	Colleen O'Hara-Epperly (1 hard copy) Bureau of Land Management Pocatello Field Office 4350 South Cliffs Drive Pocatello, ID 83204	<u>X</u>	Scott Lusty (4 hard copies) John Cunningham, Grant Williams, file copy J.R. Simplot Company Smoky Canyon Mine 1890 Smoky Canyon Mine Road Afton, WY 83110
<u>X</u>	Sandi Fisher (1 hard copy) US Fish and Wildlife Service 4425 Burley Drive, Suite A Chubbuck, ID 83202	<u>X</u>	Gary Billman (1 hard copy) Idaho Department of Lands 3563 Ririe Highway Idaho Falls, ID 83401
<u>X</u>	Matt Wilkening (1 hard copy) EPA, Idaho Operations Office 950 W. Bannock St., Suite 900 Boise, ID 83702	<u>X</u>	Kelly Wright (1 hard copy) Env. Waste Mgmt. Program Shoshone-Bannock Tribes P.O. Box 306 Fort Hall, ID 83203
<u>X</u>	Ted Yackulic (1 CD only) EPA Region 10 Office of Regional Counsel (ORC-158) 1200 Sixth Avenue Seattle, WA 98101	<u>X</u>	Susan Hanson (1 hard copy) (b) (6)
<u>X</u>	Brady Johnson (1 hard copy) Idaho Dept. of Environmental Quality 1410 North Hilton Boise, ID 83706	<u>X</u>	Doug Scott (1 CD only) CH2M Hill 59 Lilac Court Pagosa Springs, CO 81147
<u>X</u>	Rick McCormick (2 hard copies) Tim Mosko CH2M Hill 322 East Front Street Suite 200 Boise, ID 83702	<u>X</u>	Fred Charles (3 hard copies) Buz Cotton, Len Mason Formation Environmental, LLC 2500 55 th Street Suite 200 Boulder, CO 80301

NOTE: Each hard copy report includes 1 complete CD

**Simplot Responses to Agency Comments (July 7, 2014) on
“Draft Sampling and Analysis Plan Addendum 05, Smoky Canyon Mine RI/FS”
(dated June 2014)**

Specific Comments

- 1) **Page 5 and Figure 1-2, Section 2.3, Well Screen Length:** Please provide an estimate (or range) of the well screen length along with a sentence supporting the approximated annual groundwater level fluctuation of 20 feet.

Response: Text has been added to Section 2.3 and Figure 1-2 (now Figure 2) indicating that the well screen is estimated to be approximately 50 feet in length. In addition, a sentence has been added to describe how the well screen will accommodate the approximately 20-foot fluctuation in annual groundwater levels in the Wells Formation aquifer.

- 2) **Page 5 and Figure 1-2, Section 2.3, Filter Pack:** Please provide an estimate (or range) of the thickness of the filter pack(s) above and below the screened interval.

Response: Text has been added to Section 2.3 to describe the composition of Filter Pack 2 (20-40 silica sand) and the approximate thickness of each of the filter pack layers. Filter Pack 1 will be approximately 10 feet thick, both above and below the screened interval; Filter Pack 2 will be approximately 5 to 10 feet thick above Filter Pack 1 and below the bentonite seal. Figure 1-2 (now Figure 2) has been revised to include an estimate of the thickness of each filter-pack layer.

- 3) **Page 8, Section 3.3, 1st paragraph, 3rd sentence:** The text here says well casing will be PVC, but in Section 2.3 the casing is stated to be steel up to the ground surface. Revise as needed.

Response: The word “PVC” has been changed to “steel” to describe the well casing above the well screen. Sixty feet of Stainless Steel casing will be installed above the well screen, and Low Carbon Steel casing will be installed from the top of the Stainless Steel casing to the ground surface.

- 4) **Table 1-1:** Text indicates that opportunistic sampling at multiple depths may occur during drilling as the borehole is advanced through separate water-bearing zones, if any. Opportunistic sampling during drilling is not mentioned in the work plan text. Nor are the methods that will be utilized to collect opportunistic samples. Add a discussion of opportunistic sampling including methodology to the work plan text.

Response: Opportunistic sampling is not planned for groundwater encountered during drilling in the deep bedrock borehole for the new well (the cited text was a remnant from a previous SAP addendum). Therefore, the discussion of opportunistic sampling has been deleted from Table 1-1 (now Table 1). The description of daily measurements under “Planned Monitoring and Sampling Frequency and Duration” has been expanded to clarify that these are daily water level measurements made during drilling. Continuous groundwater level measurements will be obtained after well development using a dedicated pressure transducer and data logger.

Addendum 08

Smoky Canyon Mine Remedial Investigation/Feasibility Study Sampling and Analysis Plan

July 2016

Additional Small Mammal Sampling

Prepared for:



J.R. Simplot Company

Smoky Canyon Mine
P.O. Box 912
1130 West Highway 30
Pocatello, ID 83204

P.O. Box 27, One Capital Center
999 Main Street, Suite 1300
Boise, ID 83707-0027

Prepared by:



Formation Environmental, LLC
2500 55th Street, Suite 200
Boulder, Colorado 80301

EPA Comments on

The RI/FS Sampling and Analysis Plan, Addendum 08, Smoky Canyon Mine

Specific Comments:

P. 3, Section 1.3, last para. The logic of why the Pole Canyon ODA will not be resampled for small mammals is not clear. This ODA was the location of some of the highest concentrations of copper in small mammal tissue. Resampling the area follow the removal action would provide some information on whether the cover is effective in reducing the uptake of contaminants by these small mammals. Sampling at the Pole Canyon ODA is recommended.

P. 5, Section 2.3. This section notes that the analysis of these samples will use the updated EPA Analytical Method 6020A. Note that at the Conda Mine when the analytical method was changed to 6020A we saw an increase in selenium concentrations that ranged from 10-34% with an average increase of 17% from samples collected at the same sample locations. (The Conda sampling is in support of an ongoing study to confirm the effectiveness of proposed remedy.) It is recognized that this example noted a change in selenium concentrations. Has there been any similar changes in long term monitoring data of contaminants noted at the Smoky Canyon Mine?



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CORPORATE – POCA TELLO OFFICE

July 6, 2016

Art Burbank
USDA Forest Service – Caribou National Forest
410 East Hooper Street
Soda Springs, Idaho 83276

US EPA
JUL 07 2016
IDAHO OPERATIONS OFFICE

**Subject: Smoky Canyon Mine Remedial Investigation/Feasibility Study (RI/FS)
Final Addendum 08 to Final Sampling and Analysis Plan (SAP)
Additional Small Mammal Sampling**

Dear Art:

Please find enclosed one unbound hardcopy of Addendum 08 to the Final Sampling and Analysis Plan (SAP) for the Smoky Canyon RI/FS. The J.R. Simplot Company (Simplot) is submitting the enclosed document in accordance with the August 2009 Settlement Agreement/Consent Order. This submittal addresses comments on the Draft Addendum 08 (April 7, 2016) as provided by the Agencies on June 2 and in follow-up communication on June 21, 2016.

The electronic files are available for download at:

<https://smokyrifs.formationclient.com/>

Username: (b) (6)

Password (case sensitive): (b) (6)

Please contact me if you have any questions. We look forward to your review and formal approval of this submittal.

Sincerely,

Monty Johnson
Environmental Engineering Manager

Enclosures

cc: see attached distribution list

SMOKY CANYON MINE – DISTRIBUTION LIST

REMEDIAL INVESTIGATION/FEASIBILITY STUDY

Subject: Final Addendum 08, Sampling and Analysis Plan (SAP) – Additional Small Mammal Sampling

Date: July 6, 2016

<u>X</u>	Art Burbank (1 unbound hard copy) USDA Forest Service Caribou/Targhee National Forest Soda Springs District Office Attn: Smoky Canyon Site Record 410 E. Hooper St. Soda Springs, ID 83276	<u>X</u>	Art Burbank, Sherri Stumbo (1 hard copy) USDA Forest Service Intermountain Region 4350 South Cliffs Drive Pocatello, ID 83204
<u>X</u>	James Alexander (1 CD only) USDA Office of the General Counsel 1220 SW Third Avenue Floor G, Room G002 (mail room) Portland, OR 97204	<u>X</u>	Alan Prouty, Burl Ackerman (2 hard copies) J.R. Simplot Company P.O. Box 27, One Capital Center 999 Main Street, Ste 1400 (mail room) Boise, ID 83707-0027
<u>X</u>	Wayne Crowther (1 hard copy) Idaho Dept. of Environmental Quality 444 Hospital Way, Suite 300 Pocatello, ID 83201	<u>X</u>	Monty Johnson, Lori Hamann (2 hard copies) J.R. Simplot Company P.O. Box 912 1130 West Highway 30 Pocatello, ID 83204
<u>X</u>	Colleen O'Hara-Epperly (1 hard copy) Bureau of Land Management Pocatello Field Office 4350 South Cliffs Drive Pocatello, ID 83204	<u>X</u>	Chad Gentry (email only) Rachel Roskelley (1 hard copy) J.R. Simplot Company, Smoky Canyon Mine 1890 Smoky Canyon Mine Road Afton, WY 83110
<u>X</u>	Sandi Fisher (1 hard copy) US Fish and Wildlife Service 4425 Burley Drive, Suite A Chubbuck, ID 83202	<u>X</u>	Gary Billman (1 hard copy) Idaho Department of Lands 3563 Ririe Highway Idaho Falls, ID 83401
<u>X</u>	Matt Wilkening (1 hard copy) EPA, Idaho Operations Office 950 W. Bannock St., Suite 900 Boise, ID 83702	<u>X</u>	Kelly Wright (1 hard copy) Env. Waste Mgmt. Program Shoshone-Bannock Tribes P.O. Box 306 Fort Hall, ID 83203
<u>X</u>	Nick Vidargas (1 CD only) EPA Region 10 Office of Regional Counsel (ORC-158) 1200 Sixth Avenue Seattle, WA 98101	<u>X</u>	Susan Hanson (1 hard copy) (b) (6)
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NOTE: Each hard copy report includes 1 complete CD



File Code: 2160
Date: July 15, 2016

Alan Prouty
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ok

US EPA
JUL 18 2016
IDAHO OPERATIONS OFFICE

RE: Smoky Canyon Mine RI/FS Sampling and Analysis Plan Addendum 08 Additional Small Mammal Sampling

Dear Alan,

The Agencies received the Final Smoky Canyon Mine RI/FS Sampling and Analysis Plan (SAP) Addendum 08 Additional Small Mammal Sampling, with incorporated comments from the Agencies which were submitted on June 2 and June 21, 2016. The Forest Service approves the RI/FS SAP Addendum 08 Additional Small Mammal Sampling.

If you have any questions, please contact Arthur Burbank at 208-236-7572.

Sincerely,

SHERRI STUMBO
Deputy Director, Engineering

cc: Monty Johnson; Simplot, Pocatello
Burl Ackerman; Simplot, Boise
Fred Charles; Formation Environmental, Boulder
Sandi Fisher; USFWS, Pocatello
Colleen O'Hara-Epperly; BLM, Pocatello
Brady Johnson; IDEQ, State Office
Wayne Crowther; IDEQ, Pocatello
Kelly Wright; Shoshone-Bannock Tribes, Fort Hall
Susan Hanson; Shoshone-Bannock Tribes, Fort Hall
Rick McCormick; CH2M Hill, Boise
Rachelle Roskelly; Simplot (email only)



**Simplot Responses to Agency Comments (June 2 and 21, 2016) on
“Addendum 08, Sampling and Analysis Plan (SAP) - Additional Small Mammal Sampling”
(April 2016 Submittal to the Agencies)**

General Comments:

GC-1 The addendum to sample small mammals in 2016 would not be necessary if the copper concentrations in small mammal tissue did not have the potential to be real; therefore, remove any reference which suggests that copper concentrations in small mammal tissues are an anomaly (i.e. “apparently anomalous”, “suspected anomalous”, etc.)

Response: The references to “anomalous” copper concentrations have been removed. Instead, the copper results are referenced as “questionable” or “high”.

Agency Response (June 21, 2016) to Simplot Response to GC-1: The continued use of subjective terms (i.e. questionable) averse to the high copper small mammal tissue concentration results at Smoky Canyon Mine is not appropriate for an objective, unbiased, and scientific Sampling and Analysis Plan with the stated objective to “confirm the presence/absence of high copper concentrations”.

Until 2016 small mammal tissue copper concentrations can “confirm the presence/absence of high copper concentrations” in small mammal tissue, then previous results should only be described as “high”.

Replace the term “questionable” with “high” (Section 1.0, page 1, paragraph two, last sentence and Section 1.3, page 3, paragraph one, last sentence).

Simplot Response to Agency Response (June 21, 2016): The term “questionable” has been replaced with “high” in the document.

Specific Comments:

SC-1 Page 3, Section 1.3, last paragraph: The logic of why the Pole Canyon ODA will not be resampled for small mammals is not clear. This ODA was the location of some of the highest concentrations of copper in small mammal tissue. Resampling the area following the removal action would provide some information on whether the cover is effective in reducing the uptake of contaminants by these small mammals. Sampling at Pole Canyon ODA is recommended.

Response: As requested by this comment, the two Pole Canyon ODA locations with high copper concentrations have been added to the sampling effort (see text, Table 1, and Figure 1). Note that construction of the new cover on the Pole Canyon ODA was completed in late 2015, and final repairs are being completed in June 2016. Now that a new cover is in place, the original small mammal sampling locations do not exist as the surface has been covered with at least 5 feet of Dinwoody and chert material. The two Pole Canyon ODA small mammal sampling locations will be situated as close to the original locations as feasible.

SC-2 Page 5, Section 2.2, 3rd paragraph, first sentence: Please specify the inhalant that will be used to euthanize small mammals.

Response: The inhalant used for the original RI sampling was carbon dioxide (CO₂); an inhalant was utilized because only a subset of the trapped small mammals were euthanized and submitted for tissue analysis. However, live trapping is not required for the additional sampling of small mammals, as all small mammals will be submitted for tissue analysis. For this reason, snap traps will be used instead of live traps. The text has been revised to reflect this, and SOP No. 26 (Small Mammal Tissue Sampling) has been updated accordingly.

SC-3 Page 5, Section 2.3: This section notes that the analysis of these samples will use the updated EPA Analytical Method 6020A. Note that at the Conda Mine when the analytical method was changed to 6020A, an increase in selenium concentrations was observed that ranged from 10-34% with an average increase of 17% from samples collected at the same sample locations. (The Conda sampling is in support of an ongoing study to confirm the effectiveness of proposed remedy.) It is recognized that this example noted a change in selenium concentrations. Has there been any similar changes in long term monitoring data of contaminants noted at the Smoky Canyon Mine?

Response: As shown in Table 2, the laboratory method for selenium analysis of small mammal tissue is EPA Method 7742, which is the same method used for the original analysis of selenium under the Smoky Canyon Mine RI for 2010 sample collection. There are no plans to change the selenium analysis method for the additional small mammal sampling (the method will be EPA Method 7742, as before). Therefore, this comment does not require a change to the SAP addendum. No long-term changes in tissue data, potentially attributable to changes in laboratory methods, have been noted at the Smoky Canyon Mine.

For the other analytes, except for mercury (to be analyzed using EPA Method 7471A, as before), analyses are planned using either EPA Method 6020A or 6010C (Table 2). The laboratory conducting the tissue analysis has indicated that analyzing by Method 6020A (ICP-MS) for these analytes is appropriate for a tissue matrix. Therefore, Simplot plans to allow the laboratory the flexibility to substitute EPA Method 6020A for 6010C (except for selenium and mercury) for analysis of small mammal tissue samples. Accordingly, a footnote has been added to Table 2.

**Simplot Responses to Agency Comments (June 2, 2016) on
"Addendum 08, Sampling and Analysis Plan (SAP) - Additional Small Mammal Sampling"
(April 2016 Submittal to the Agencies)**

General Comments:

GC-1 The addendum to sample small mammals in 2016 would not be necessary if the copper concentrations in small mammal tissue did not have the potential to be real; therefore, remove any reference which suggests that copper concentrations in small mammal tissues are an anomaly (i.e. "apparently anomalous", "suspected anomalous", etc.)

Response: The references to "anomalous" copper concentrations have been removed. Instead, the copper results are referenced as "questionable" or "high".

Specific Comments:

SC-1 Page 3, Section 1.3, last paragraph: The logic of why the Pole Canyon ODA will not be resampled for small mammals is not clear. This ODA was the location of some of the highest concentrations of copper in small mammal tissue. Resampling the area following the removal action would provide some information on whether the cover is effective in reducing the uptake of contaminants by these small mammals. Sampling at Pole Canyon ODA is recommended.

Response: As requested by this comment, the two Pole Canyon ODA locations with high copper concentrations have been added to the sampling effort (see text, Table 1, and Figure 1). Note that construction of the new cover on the Pole Canyon ODA was completed in late 2015, and final repairs are being completed in June 2016. Now that a new cover is in place, the original small mammal sampling locations do not exist as the surface has been covered with at least 5 feet of Dinwoody and chert material. The two Pole Canyon ODA small mammal sampling locations will be situated as close to the original locations as feasible.

SC-2 Page 5, Section 2.2, 3rd paragraph, first sentence: Please specify the inhalant that will be used to euthanize small mammals.

Response: The inhalant used for the original RI sampling was carbon dioxide (CO₂); an inhalant was utilized because only a subset of the trapped small mammals were euthanized and submitted for tissue analysis. However, live trapping is not required for the additional sampling of small mammals, as all small mammals will be submitted for tissue analysis. For this reason, snap traps will be used instead of live traps. The text has been revised to reflect this, and SOP No. 26 (Small Mammal Tissue Sampling) has been updated accordingly.

SC-3 Page 5, Section 2.3: This section notes that the analysis of these samples will use the updated EPA Analytical Method 6020A. Note that at the Conda Mine when the analytical method was changed to 6020A, an increase in selenium concentrations was observed that ranged from 10-34% with an average increase of 17% from samples collected at the same sample locations. (The Conda sampling is in support of an

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ongoing study to confirm the effectiveness of proposed remedy.) It is recognized that this example noted a change in selenium concentrations. Has there been any similar changes in long term monitoring data of contaminants noted at the Smoky Canyon Mine?

Response: As shown in Table 2, the laboratory method for selenium analysis of small mammal tissue is EPA Method 7742, which is the same method used for the original analysis of selenium under the Smoky Canyon Mine RI for 2010 sample collection. There are no plans to change the selenium analysis method for the additional small mammal sampling (the method will be EPA Method 7742, as before). Therefore, this comment does not require a change to the SAP addendum. No long-term changes in tissue data, potentially attributable to changes in laboratory methods, have been noted at the Smoky Canyon Mine.

For the other analytes, except for mercury (to be analyzed using EPA Method 7471A, as before), analyses are planned using either EPA Method 6020A or 6010C (Table 2). The laboratory conducting the tissue analysis has indicated that analyzing by Method 6020A (ICP-MS) for these analytes is appropriate for a tissue matrix. Therefore, Simplot plans to allow the laboratory the flexibility to substitute EPA Method 6020A for 6010C (except for selenium and mercury) for analysis of small mammal tissue samples. Accordingly, a footnote has been added to Table 2.